TITLE 327 WATER POLLUTION CONTROL BOARD

FIRST NOTICE OF COMMENT PERIOD
#02-138(WPCB)

DEVELOPMENT OF A NEW RULE CONCERNING STATEWIDE MERCURY VARIANCE

PURPOSE OF NOTICE

The Indiana Department of Environmental Management (IDEM) is soliciting public comment on the development of a new rule concerning a statewide variance from the water quality standard for mercury. IDEM seeks comment on the affected citation listed and any other provisions of Title 327 that may be affected by this rulemaking.

CITATIONS AFFECTED: 327 IAC 2.

AUTHORITY: IC 13-13-5-1; 13-13-5-2; IC 13-14-8; 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3-1; IC 13-18-3-2; IC 13-18-3-3; IC 13-18-4-3.

SUBJECT MATTER AND BASIC PURPOSE OF RULEMAKING

The subject matter of this rulemaking has been included in other notices of rulemaking, the most recent of which was a first notice in the May 1, 2001, Indiana Register (24 IR 2593). Although that first notice (#01-135(WPCB)) addressed variances from water quality standards, it was more closely related to the current variance process whereby an applicant may submit an application for a variance from a water quality criterium for a specific pollutant or pollutant parameter. Based on comments received to the May 1, 2001, first notice as well as continued discussions about the most efficient method to conduct the rulemakings required under Section 303(c) of the Clean Water Act (known as "triennial review"), IDEM has determined that a separate rulemaking on a statewide mercury variance is a necessary course of action. Amendments to variance rules for pollutants other than mercury will be conducted under #01-135(WPCB), the rulemaking initiated with the May 1, 2001, first notice.

STATUTORY AND REGULATORY REQUIREMENTS

IC 13-14-8-4 requires the board to consider the following factors in promulgating rules:

(1) All existing physical conditions and the character of the area affected.

(2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.

(3) Zoning classifications.

(4) The nature of the existing air quality or existing water quality, as the case may be.

(5) Technical feasibility, including the quality conditions that could reasonably be achieved through coordinated control of all factors affecting the quality.

(6) Economic reasonableness of measuring or reducing any particular type of pollution.

(7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to human, plant, animal, or aquatic life or to the reasonable enjoyment of life and property.

REQUEST FOR PUBLIC COMMENTS

At this time, IDEM solicits the following:

(1) The submission of alternative ways to achieve the purpose of the rule.

(2) The submission of suggestions for the development of draft rule language.

Mailed comments should be addressed to:
#02-138(WPCB)[Mercury Variance]
MaryAnn Stevens
Rules Section
Office of Water Quality
Indiana Department of Environmental Management
P.O. Box 6015
Indianapolis, Indiana 46206-6015.

Hand delivered comments will be accepted by the IDEM receptionist on duty at the twelfth floor reception desk, Office of Water Quality, Indiana Government Center-North, Room 1255, 100 North Senate Avenue, Indianapolis, Indiana. Comments may be delivered by facsimile to (317) 232-8406. Please confirm the timely receipt of faxed comments by calling the Office of Water Quality Rules Section at (317) 233-8903.

COMMENT PERIOD DEADLINE

Comments must be postmarked, faxed, or hand delivered by June 30, 2002.

Additional information regarding this action may be obtained from MaryAnn Stevens, Rules Section, Office of Water Quality, (317) 232-8635 or (800) 451-6027 (in Indiana).

Tim Method
Deputy Commissioner
Indiana Department of Environmental Management

TITLE 327 WATER POLLUTION CONTROL BOARD

SECOND NOTICE OF COMMENT PERIOD
#01-348(WPCB)

DEVELOPMENT OF AMENDMENTS TO RULES AND NEW RULES CONCERNING DRINKING WATER STANDARDS, SPECIFICALLY CONCERNING INTERIM ENHANCED SURFACE WATER TREATMENT, DISINFECTANTS AND DISINFECTION BYPRODUCTS, AND FILTER BACKWASH FOR PUBLIC DRINKING WATER SYSTEMS

PURPOSE OF NOTICE

The Indiana Department of Environmental Management (IDEM) has developed draft rule language for amendments to 327 IAC 8-2 and 327 IAC 8-2.1 and new rules 327 IAC 8-2.5 and 327 IAC 8-2.6 concerning interim enhanced surface water treatment, disinfectants/disinfection byproducts, and filter backwash. By this notice, IDEM is soliciting public comment on the draft rule language. IDEM seeks comment on the affected citations listed and any other provisions of Title 327 that may be affected by this rulemaking.

HISTORY

First Notice of Comment Period: October 1, 2001, Indiana Register (25 IR 206).

CITATIONS AFFECTED: 327 IAC 8-2-1; 327 IAC 8-2-5; 327 IAC 8-2-5.3; 327 IAC 8-2-6; 327 IAC 8-2-6.1; 327 IAC 8-2-8.5; 327 IAC 8-2-13; 327 IAC 8-2-30; 327 IAC 8-2-31; 327 IAC 8-2.1-3; 327 IAC 8-2.1-4; 327 IAC 8-2.1-8; 327 IAC 8-2.1-16; 327 IAC 8-2.1-17; 327 IAC 8-2.5; 327 IAC 8-2.6.

AUTHORITY: IC 13-13-5-1; IC 13-14-8-1; IC 13-14-8-2; IC 13-18-3-2; IC 13-18-16-9.

SUBJECT MATTER AND BASIC PURPOSE OF RULEMAKING

On December 16, 1998, U.S. EPA published National Drinking Water Regulations for Interim Enhanced Surface Water Treatment. These regulations make changes to the Indiana surface water treatment rule as published April 12, 1993. These changes are being made to improve implementation of the rule. The intended effect of the rule is to strengthen microbial protection, including provisions specifically to address Cryptosporidium, and to address risk trade-offs with disinfection byproducts.

Also on December 16, 1998, U.S. EPA published National Drinking Water Regulations for Disinfectants and Disinfection Byproducts. These regulations update the 1979 regulations for total trihalomethanes. In addition, these regulations will reduce exposure to three disinfectants (chlorine, chloramine, and chlorine dioxide) and many disinfection byproducts.

On June 8, 2001, U.S. EPA published National Drinking Water Regulations for Filter Backwash Recycling. These regulations address a statutory requirement of the 1996 Safe Drinking Water Act (SDWA) Amendments to promulgate a regulation which "governs" the recycling of filter backwash water within the treatment process of public water systems. The purpose of these regulations is to further protect public health by requiring public water systems, where needed, to institute changes to the return of recycle flows to plant's treatment process that may otherwise compromise microbial control. Indiana is required to adopt all of these revisions in order to maintain primacy (primary enforcement authority) for the Safe Drinking Water Program.

SUMMARY/RESPONSE TO COMMENTS FROM THE FIRST COMMENT PERIOD

IDEM requested public comment from October 1, 2001 through October 30, 2001 on alternative ways to achieve the purpose of the rule and suggestions for the development of draft rule language. IDEM received no comments in response to the first notice of public comment period

REQUEST FOR PUBLIC COMMENTS

This notice requests the submission of comments on the draft rule language, including suggestions for specific revisions to language to be contained in the draft rule. Mailed comments should be addressed to:

#01-348(WPCB) Amendments to Drinking Water Standards
Lawrence Wu
Rules Section Chief
Office of Water Quality
Indiana Department of Environmental Management
P.O. Box 6015
Indianapolis, Indiana 46206-6015.

Hand delivered comments will be accepted by the receptionist on duty at the twelfth floor reception desk, Office of Water Quality, 100 North Senate Avenue, Indianapolis, Indiana.

Comments may be submitted by facsimile at the IDEM fax number: (317) 232-8406, Monday through Friday, between 8:15 a.m. and 4:45 p.m. Please confirm the timely receipt of faxed comments by calling the Rules Section at (317) 233-8903.

COMMENT PERIOD DEADLINE

Comments must be postmarked, faxed, or hand delivered by June 30, 2002.

Additional information regarding this action may be obtained from Megan Wallace, Rules Section, Office of Water Quality, (317) 233-8669 or (800) 451-6027 (in Indiana).

DRAFT RULE

SECTION 1. 327 IAC 8-2-1, AS AMENDED AT 25 IR 1075, SECTION 1, IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-1 Definitions

Authority: IC 13-13-5; IC 13-14-8-7; IC 13-14-9; IC 13-18-3; IC 13-18-16
Affected: IC 13-11-2; IC 13-18

Sec. 1. In addition to the definitions contained in IC 13-11-2 and 327 IAC 1, the following definitions apply throughout this rule**, 327 IAC 8-2.1, 327 IAC 8-2.5, and 327 IAC 8-2.6:**

(1) "Act" means the Safe Drinking Water Act (42 U.S.C. 300f et seq.).

(2) "Action level" means the concentration of lead or copper in water specified in section 36(c) of this rule which determines, in some cases, the treatment requirements contained in sections 36 through 47 of this rule, that a water system is required to complete.

(3) "Adjustment program" means the addition of fluoride to drinking water by a public water system for the prevention of dental cavities.

(4) "Administrator" means the administrator of the U.S. EPA.

(5) "Best available technology (BAT)" means best technology, treatment techniques, or other means which the commissioner finds are available, after examination for efficacy under field conditions, and not solely under laboratory conditions, and after taking cost into consideration. For the purpose of setting maximum contaminant levels for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon.

(6) "Coagulation" means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

(7) "Commissioner" means the commissioner of the Indiana department of environmental management or the designated agent of the commissioner.

(8) "Community water system **(CWS)**" means a public water system that serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

(9) "Compliance cycle" means the nine (9) year calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three (3) three-year compliance periods. The first calendar year cycle begins January 1, 1993, and ends December 31, 2001; the second begins January 1, 2002, and ends December 31, 2010; the third begins January 1, 2011, and ends December 31, 2019.

(10) "Compliance period" means a three (3) year calendar year period within a compliance cycle. Each compliance cycle has three (3) three-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993, to December 31, 1995; the second from January 1, 1996, to December 31, 1998; the third from January 1, 1999, to December 31, 2001. Within the second compliance cycle, the first compliance period runs from January 1, 2002, to December 31, 2004; the second from January 1, 2005, to December 31, 2007; and the third from January 1, 2008, to December 31, 2010. Within the third compliance cycle, the first compliance period runs from January 1, 2011, to December 31, 2013; the second from January 1, 2014, to December 31, 2016; and the third from January 1, 2017, to December 31, 2019.

(11) "Comprehensive performance evaluation" or "CPE" means a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative,

operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purposes of compliance with 327 IAC 8-2.6-1, the comprehensive performance evaluation must consist of at least the following components:

(A) Assessment of plant performance.

(B) Evaluation of major unit processes.

(C) Identification and prioritization of performance limiting factors.

(D) Assessment of the applicability of comprehensive technical assistance.

(E) Preparation of a CPE report.

~~(11)~~ **(12)** "Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

~~(12)~~ **(13)** "Contaminant" means any micro-organisms, chemicals, waste, physical substance, radiological substance, or any wastewater introduced or found in the drinking water.

~~(13)~~ **(14)** "Conventional filtration treatment" means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

~~(14)~~ **(15)** "Corrosion inhibitor" means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

~~(15)~~ **(16)** "CT" or "CTcalc" is the product of residual disinfectant concentration (C) in milligrams per liter determined before or at the first customer and the corresponding disinfectant contact time (T) in minutes, such as C × T. If a public water system applies disinfectants at more than one (1) point prior to the first customer, it must determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or total inactivation ratio. In determining the total inactivation ratio, the public water system must determine the residual disinfectant concentration of each disinfection sequence and corresponding contact time before any subsequent disinfection application point. $CT_{99.9}$ is the CT value required for ninety-nine and nine-tenths percent (99.9%) (3-log) inactivation of Giardia lamblia cysts. $CT_{99.9}$ for a variety of disinfectants and conditions appears in Tables 1.1-1.6, 2.1, and 3.1 of paragraph 141.74(b)(3)[1].

$$\frac{CTcalc}{CT_{99.9}}$$

is the inactivation ratio. The sum of the inactivation ratios or total inactivation ratio shown as:

$$\sum \frac{(CTcalc)}{(CT_{99.9})}$$

is calculated by adding together the inactivation ratio for each disinfection sequence. A total inactivation ratio equal to or greater than one (1.0) is assumed to provide a 3-log inactivation of Giardia lamblia cysts.

~~(16)~~ **(17)** "Diatomaceous earth filtration" means a process resulting in substantial particulate removal in which:

(A) a precoat cake of diatomaceous earth filter media is deposited on a support membrane (septum); and

(B) while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

~~(17)~~ **(18)** "Direct filtration" means a series of processes, including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal.

~~(18)~~ **(19)** "Disinfectant" means any oxidant, including, but not limited to, chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process that is intended to kill or inactivate pathogenic micro-organisms.

~~(19)~~ **(20)** "Disinfectant contact time" (T in CT calculations) means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration (C) is measured. Where only one (1) C is measured, T is the time in minutes that it takes for water to move from the point of disinfectant application to a point before or at where C is measured. Where more than one (1) C is measured, T is:

(A) for the first measurement of C, the time in minutes that it takes for water to move from the first or only point of disinfectant application to a point before or at the point where the first C is measured; and

(B) for subsequent measurements of C, the time in minutes that it takes for water to move from the previous C measurement point to the C measurement point for which the particular T is being calculated.

Disinfectant contact time in pipelines must be calculated based on plug flow by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe. Disinfectant contact time within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

~~(20)~~ **(21)** "Disinfection" means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

(22) "Disinfection profile" means a summary of daily Giardia lamblia inactivation through a treatment plant.

~~(21)~~ **(23)** "Domestic or other nondistribution system plumbing problem" means a coliform contamination problem in a public water system with more than one (1) service connection that is limited to the specific service connection from which the coliform-positive sample was taken.

~~(22)~~ **(24)** "Dose equivalent" means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRUM).

~~(23)~~ **(25)** "Drinking water violation" means violations of the maximum contaminant level (MCL), treatment technique (TT), monitoring requirements, and testing procedures in this rule. 327 IAC 8-2.1-16 identifies the tier assignment for each specific violation or situation requiring a public notice.

~~(24)~~ **(26)** "Effective corrosion inhibitor residual" means a concentration sufficient to form a passivating film on the interior walls of a pipe for the purpose of sections 36 through 47 of this rule only.

(27) "Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

(28) "Enhanced softening" means the improved removal of disinfection byproduct precursors by precipitative softening.

(29) "Filter profile" means a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire

filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

~~(25)~~ **(30)** "Filtration" means a process for removing particulate matter from water by passage through porous media.

~~(26)~~ **(31)** "First draw sample" means a one (1) liter sample of tap water collected in accordance with section 37 of this rule, that has been standing in the plumbing pipes at least six (6) hours and is collected without flushing the tap.

~~(27)~~ **(32)** "Flocculation" means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

(33) "GAC10" means granular activated carbon filter beds with an empty-bed contact time of ten (10) minutes based on average daily flow and a carbon reactivation frequency of every one hundred eighty (180) days.

~~(28)~~ **(34)** "Gross alpha particle activity" means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

~~(29)~~ **(35)** "Gross beta particle activity" means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

~~(30)~~ **(36)** "Ground water under the direct influence of surface water" means any water beneath the surface of the ground with:

(A) significant occurrence of insects or other macro-organisms, algae, or large-diameter pathogens such as Giardia lamblia or **Cryptosporidium**; or

(B) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

Direct influence must be determined for individual sources in accordance with criteria established by the commissioner. The commissioner's determination of direct influence may be based on site-specific measurements of water quality and/or documentation of well construction characteristics and geology with field evaluation.

(37) "Haloacetic acids (five)" or "HAA5" means the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two (2) significant figures after addition.

~~(31)~~ **(38)** "Halogen" means one (1) of the chemical elements chlorine, bromine, or iodine.

~~(32)~~ **(39)** "Initial compliance period" means January 1993 to December 1995, for the contaminants listed in sections 4 (other than arsenic, barium, cadmium, fluoride, lead, mercury, selenium, and silver), 5, and 5.4(a) (other than benzene, vinyl chloride, carbon tetrachloride, 1,2-dichloroethane, trichloroethylene, 1,1-dichloroethylene, 1,1,1-trichloroethane, and para-dichlorobenzene) of this rule.

~~(33)~~ **(40)** "Large water system" means a water system that serves more than fifty thousand (50,000) people for the purpose of sections 36 through 47 of this rule only.

~~(34)~~ **(41)** "Lead service line" means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting which is connected to such lead line.

~~(35)~~ **(42)** "Legionella" means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

~~(36)~~ **(43)** "Manmade beta particle and photon emitters" means all radionuclides emitting beta particle and/or photons listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure", NBS Handbook 69, as amended August 1973, U.S. Department of Commerce, except the daughter products of thorium-232, uranium-235, and uranium-238.

~~(37)~~ **(44)** "Maximum contaminant level (MCL)" means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

~~(38)~~ **(45)** "Maximum contaminant level goal (MCLG)" means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur and which includes an adequate margin of safety. Maximum contaminant level goals are nonenforceable health goals.

(46) "Maximum residual disinfectant level" or "MRDL" means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

(47) "Maximum residual disinfectant level goal" or "MRDLG" means the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of individuals would occur, and which allows an adequate margin of safety.

~~(39)~~ **(48)** "Maximum total trihalomethane potential" **or** "MTP" means the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after seven (7) days at a temperature of twenty-five (25) degrees Celsius or above.

~~(40)~~ **(49)** "Medium size water system" means a water system that serves greater than three thousand three hundred (3,300) and less than or equal to fifty thousand (50,000) persons for the purpose of sections 36 through 47 of this rule only.

~~(41)~~ **(50)** "Near the first service connection" means at one (1) of the twenty percent (20%) of all service connections in the entire system that are nearest the water supply treatment facility, as measured by water transport time within the distribution system.

~~(42)~~ **(51)** "Noncommunity water system" means a public water system which has at least fifteen (15) service connections used by nonresidents or which regularly serves twenty-five (25) or more nonresident individuals daily for at least sixty (60) days per year.

~~(43)~~ **(52)** "Nontransient noncommunity water system" **or** "NTNCWS" means a public water system that is not a community water system which regularly serves the same twenty-five (25) or more persons at least six (6) months per year.

~~(44)~~ **(53)** "Optimal corrosion control treatment" means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while ensuring that the treatment does not cause the water system to violate any national primary drinking water regulations for the purpose of sections 36 through 47 of this rule only.

~~(45)~~ **(54)** "Performance evaluation sample" means a reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within limits of performance specified by the administrator. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis.

~~(46)~~ **(55)** "Picocuri (pCi)" means the quantity of radioactive material

producing two and twenty-two hundredths (2.22) nuclear transformations per minute.

~~(47)~~ **(56)** "Point of disinfectant application" is the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water run-off.

~~(48)~~ **(57)** "Point-of-entry treatment device" **or** "POE" is a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in drinking water distributed throughout the house or building.

~~(49)~~ **(58)** "Point-of-use treatment device" **or** "POU" is a treatment device to a single tap used for the purpose of reducing contaminants in drinking water at that one (1) tap.

~~(50)~~ **(59)** "Primacy agency" is the department of environmental management where the department exercise primary enforcement responsibility as granted by EPA.

~~(51)~~ **(60)** "Public water system" means a public water supply for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen (15) service connections or regularly serves at least twenty-five (25) individuals daily at least sixty (60) days out of the year. "Public water system" includes any collection, treatment, storage, and distribution facilities under control of the operator of such system, and used primarily in connection with such system and any collection or pretreatment storage facilities not under such control that are used primarily in connection with such system. A public water system is either a community water system or a noncommunity water system, as defined in subdivisions (8) and (42).

~~(52)~~ **(61)** "Rem" means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A millirem (mrem) is one-thousandth (1/1,000) of a rem.

~~(53)~~ **(62)** "Repeat compliance period" means any subsequent compliance period after the initial compliance period.

~~(54)~~ **(63)** "Residual disinfectant concentration"(C in CT calculations) means the concentration of disinfectant measured in milligrams per liter in a representative sample of water.

~~(55)~~ **(64)** "Sanitary survey" means an on-site inspection of the water source, facilities, equipment, construction, and operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, construction, and operation and maintenance for producing and distributing safe drinking water.

~~(56)~~ **(65)** "Sedimentation" means a process for removal of solids before filtration by gravity or separation.

~~(57)~~ **(66)** "Service line sample" means a one (1) liter sample of water collected in accordance with section 37(b)(3) of this rule that has been standing at least six (6) hours in a service line.

~~(58)~~ **(67)** "Single family structure" means a building constructed as a single family residence that is currently being used as either a residence or a place of business for the purpose of sections 36 through 47 of this rule only.

~~(59)~~ **(68)** "Slow sand filtration" means a process involving passage of raw water through a bed of sand at low velocity (generally less than four-tenths (0.4) meter per hour or forty-five (45) to one hundred fifty (150) gallons per day per square foot) resulting in substantial particulate removal by physical and biological mechanisms.

~~(60)~~ **(69)** "Small water system" means a water system that serves three thousand three hundred (3,300) persons or fewer for the purpose of sections 36 through 47 of this rule only.

~~(61)~~ **(70)** "Standard sample" means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

(71) "Subpart H system" means a public water system using surface water or ground water under the direct influence of surface water as a source that is subject to the requirements of 327 IAC 8-2.6-1.

~~(62)~~ **(72)** "Supplier of water" means any person who owns and/or operates a public water system.

~~(63)~~ **(73)** "Surface water" means all water occurring on the surface of the ground, including water in a stream, natural and artificial lakes, ponds, swales, marshes, and diffused surface water.

(74) "SUVA" means specific ultraviolet absorption at two hundred fifty-four (254) nanometers, an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of two hundred fifty-four (254) nanometers (UV_{254}) (in m^{-1}) by its concentration of dissolved organic carbon (DOC) (in milligrams per liter).

~~(64)~~ **(75)** "System with a single service connection" means a public water system which supplies drinking water to consumers via a single service line.

~~(65)~~ **(76)** "Too numerous to count" means that the total number of bacterial colonies exceeds two hundred (200) on a forty-seven (47) millimeter diameter membrane filter used for coliform detection.

(77) "Total organic carbon" or "TOC" means total organic carbon in milligrams per liter, measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two (2) significant figures.

~~(66)~~ **(78)** "Total trihalomethanes" **or** "TTHM" means the sum of the concentration in milligrams per liter of the trihalomethane compounds:

(A) trichloromethane (chloroform);
(B) dibromochloromethane;
(C) bromodichloromethane; and
(D) tribromomethane (bromoform);

rounded to two (2) significant figures.

~~(67)~~ **(79)** "Transient noncommunity water system" **or** "TWS" means a noncommunity water system that does not regularly serve at least twenty-five (25) of the same persons over six (6) months per year.

~~(68)~~ **(80)** "Trihalomethane" **or** "THM" means one (1) of the family of organic compounds, named as derivatives of methane, wherein three (3) of the four (4) hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

(81) "Uncovered finished water storage facility" means a tank, reservoir, or other facility open to the atmosphere that is used to store water that will undergo no further treatment except residual disinfection.

~~(69)~~ **(82)** "U.S. EPA" or "EPA" means the United States Environmental Protection Agency.

~~(70)~~ **(83)** "Virus" means a virus of fecal origin which is infectious to humans by waterborne transmission.

~~(71)~~ **(84)** "Waterborne disease outbreak" means the significant occurrence of acute infectious illness epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment as determined by the commissioner.

[1]Federal Register, Part II, 40 CFR 141, June 29, 1989, Volume 54, Number 124, pages 27532 through 27534. *(Water Pollution Control Board; 327 IAC 8-2-1; filed Sep 24, 1987, 3:00 p.m.: 11 IR 705; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1003; errata filed Jan 9, 1991, 2:30 p.m.: 14 IR 1070; errata filed Aug 6, 1991, 3:45 p.m.: 14 IR 2258; filed Apr 12, 1993, 11:00 a.m.: 16 IR 2151; filed Aug 24, 1994, 8:15 a.m.: 18 IR 19; errata filed Oct 11, 1994, 2:45 p.m.: 18 IR 531; filed*

Oct 24, 1997, 4:30 p.m.: 21 IR 932; filed Mar 6, 2000, 7:56 a.m.: 23 IR 1623; filed Nov 20, 2001, 10:20 a.m.: 25 IR 1075)

SECTION 2. 327 IAC 8-2-5 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-5 Organic chemicals other than volatile compounds; maximum contaminant levels

Authority: IC 13-13-5; IC 13-14-8-7; IC 13-14-9; IC 13-18-3; IC 13-18-16
Affected: IC 13-18

Sec. 5. (a) The MCLs for the following synthetic organic chemicals apply to all community water systems and nontransient noncommunity water systems, except as provided in subsection (c) for total trihalomethanes:

Contaminant	Level in Milligrams Per Liter
Total trihalomethanes ~~(the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bormoform), and trichloromehtane (chloroform))~~	0.10

CAS No.	Contaminant	MCL (mg/l)
15972-60-8	Alachlor	0.002
1912-24-9	Atrazine	0.003
50-32-8	Benzo[a]pyrene	0.0002
1563-66-2	Carbofuran	0.04
57-74-9	Chlordane	0.002
75-99-0	Dalapon	0.2
96-12-8	1,2-dibromo-3-chloropropane (DBCP)	0.0002
103-23-1	Di(2-ethylhexyl)adipate	0.4
117-81-7	Di(2-ethylhexyl)phthalate	0.006
88-85-7	Dinoseb	0.007
85-00-7	Diquat	0.02
94-75-7	2,4-D	0.07
145-73-3	Endothall	0.1
72-20-8	Endrin	0.002
106-93-4	Ethylene dibromide	0.00005
1071-53-6	Glyphosate	0.7
76-44-8	Heptachlor	0.0004
1024-57-3	Heptachlor epoxide	0.0002
118-74-1	Hexachlorobenzene	0.001
77-47-4	Hexachlorocyclopentadiene	0.05
58-89-9	Lindane	0.0002
72-43-5	Methoxychlor	0.04
23135-22-0	Oxamyl (vydate)	0.2
1918-02-1	Picloram	0.5
1336-36-3	Polychlorinated biphenyls	0.0005
87-86-5	Pentachlorophenol	0.001
122-34-9	Simazine	0.004
8001-35-2	Toxaphene	0.003
1746-01-6	2,3,7,8-TCDD (dioxin)	3×10^{-8}
93-72-1	2,4,5-TP	0.05

(b) For the synthetic organic chemicals listed in this section other than total trihalomethanes, monitoring frequency is specified in section 5.1 of this rule, and analytical methods are specified in section 5.2 of this rule.

(c) The MCL **of one tenth(0.10) milligram per liter** for total trihalomethanes ~~listed in this section~~ applies ~~only to~~ **as follows:**

(1) A subpart H community water ~~systems~~ **system** which ~~serve~~ **serves** a population of ten thousand (10,000) or more individuals ~~and which add a disinfectant (oxidant) to the water in any part of the drinking water treatment process.~~ **until December 31, 2001.**

(2) A CWS that uses only ground water not under the direct influence of surface water and serve a population of ten thousand (10,000) or more individuals until December 31, 2003.

Compliance with the MCL for total trihalomethanes is calculated under section 5.3 of this rule. **After December 31, 2003, this subsection is no longer applicable.**

(d) The commissioner hereby identifies, as indicated in the following table, granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX) as the best technology, treatment technique, or other means available for achieving compliance with the MCL for synthetic organic contaminants identified in subsection (a):

BAT for Synthetic Organic Contaminants Listed in Subsection (a)

CAS No.	Contaminant	GAC	PTA	OX
15972-60-8	Alachlor	X		
1912-24-9	Atrazine	X		
50-32-8	Benzo[a]pyrene	X		
1563-66-2	Carbofuran	X		
57-74-9	Chlordane	X		
94-75-7	2,4-D	X		
75-99-0	Dalapon	X		
96-12-8	1,2-dibromo-3-chloropropane (DBCP)	X	X	
103-23-1	Di(2-ethylhexyl)adipate	X	X	
117-81-7	Di(2-ethylhexyl)phthalate	X		
88-85-7	Dinoseb	X		
85-00-7	Diquat	X		
145-73-3	Endothall	X		
72-20-8	Endrin	X		
106-93-4	Ethylene dibromide (EDB)	X	X	
1071-53-6	Glyphosate			X
76-44-8	Heptachlor	X		
1024-57-3	Heptachlor epoxide	X		
118-74-1	Hexachlorobenzene	X		
77-47-3	Hexachlorocyclopentadiene	X	X	
58-89-9	Lindane	X		
72-43-5	Methoxychlor	X		
23135-22-0	Oxamyl (vydate)	X		
1918-02-1	Picloram	X		
1336-36-3	Polychlorinated biphenyls (PCBs)	X		
87-86-5	Pentachlorophenol	X		
93-72-1	2,4,5-TP (silvex)	X		
122-34-9	Simazine	X		
1746-01-6	2,3,7,8-TCDD (dioxin)	X		
8001-35-2	Toxaphene	X	X	

(Water Pollution Control Board; 327 IAC 8-2-5; filed Sep 24, 1987, 3:00 p.m.: 11 IR 706; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1009; errata filed Aug 6, 1991, 3:45 p.m.: 14 IR 2258; filed Aug 24, 1994,

8:15 a.m.: 18 IR 32; errata filed Oct 11, 1994, 2:45 p.m.: 18 IR 531; filed Aug 25, 1997, 8:00 a.m.: 21 IR 43)

SECTION 3. 327 IAC 8-2-5.3, AS AMENDED AT 25 IR 1086, SECTION 6, IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-5.3 Collection of samples for total trihalomethanes testing; community water systems

Authority: IC 13-13-5; IC 13-14-8-7; IC 13-14-9; IC 13-18-3; IC 13-18-16
Affected: IC 13-11-2; IC 13-14-8; IC 13-18-1; IC 13-18-2

Sec. 5.3. (a) To determine compliance with section 5 of this rule, each community water system which serves ten thousand (10,000) or more individuals and which adds a disinfectant (oxidant) to the water in any part of the drinking water treatment process shall collect and analyze samples for total trihalomethanes (TTHM) in accordance with this section. The minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with the commissioner's approval, be considered one (1) treatment plant for determining the minimum number of samples. All samples taken within an established frequency shall be collected within a twenty-four (24) hour period.

(b) The requirements of subsection (a) apply as follows:

(1) Community water systems which utilize surface water sources in whole or in part, and community water systems which utilize only ground water sources and which have not been determined by the commissioner to qualify for the monitoring requirements of subsection (c) shall analyze for TTHM at quarterly intervals on at least four (4) water samples for each treatment plant used by the system. At least twenty-five percent (25%) of the samples shall be taken at locations within the distribution system reflecting the maximum residence time of the water in the system. The remaining seventy-five percent (75%) shall be taken at representative locations in the distribution system, taking into account number of persons served, different sources of water, and different treatment methods employed. The results of all analyses per quarter shall be arithmetically averaged and reported to the commissioner within thirty (30) days of the system's receipt of such results. All samples collected shall be used in the computation of the average, unless the analytical results are invalidated for technical reasons. Sampling and analyses shall be conducted in accordance with the methods listed in subsection (e).

(2) Upon the written request of a community water system, the monitoring frequency required by subdivision (1) may be reduced by the commissioner to a minimum of one (1) sample analyzed for TTHM per quarter taken at a point in the distribution system reflecting the maximum residence time of the water in the system. Upon a written determination by the commissioner that the data from at least one (1) year of monitoring in accordance with subdivision (1) and local conditions demonstrate that TTHM concentrations will be consistently below the MCL.

(3) If, at any time during which the reduced monitoring frequency prescribed under this section applies, the results from any analysis exceed ten-hundredths (0.10) milligram per liter of TTHM and such results are confirmed by at least one (1) check sample taken promptly after such results are received, or if the system makes any significant change to its source of water or treatment program, the system shall immediately begin monitoring in accordance with the requirements of subdivision (1) which monitoring shall continue for at least one (1) year before the frequency may be reduced again. At the discretion of the commissioner, a system's monitoring frequency shall be increased above the minimum in those cases where it is necessary to detect variations of TTHM levels within the distribution system.

(c) Monitoring frequency required by this section may only be reduced as follows:

(1) Upon written request to the commissioner, a community water system utilizing only ground water sources may seek to have the monitoring frequency required by subsection (a) reduced to a minimum of one (1) sample for maximum TTHM potential per year for each treatment plant used by the system taken at a point in the distribution system reflecting maximum residence time of the water in the system. The system shall submit, to the commissioner, the results of at least one (1) sample analyzed for maximum TTHM potential using the procedure specified in subsection (g). A sample must be analyzed from each treatment plant used by the system and be taken at a point in the distribution system reflecting the maximum residence time of the water in the system. The system's monitoring frequency may only be reduced upon a written determination by the commissioner that, based upon the data submitted by the system, the system has a maximum TTHM potential of less than ten-hundredths (0.10) milligram per liter and that, based upon an assessment of the local condition of the system, the system is not likely to approach or exceed the MCL for total TTHMs. The results of all analyses shall be reported to the commissioner within thirty (30) days of the system's receipt of such results. All samples collected shall be used for determining whether the system must comply with the monitoring requirements of subsection (a) unless the analytical results are invalidated for technical reasons. Sampling and analyses shall be conducted in accordance with the methods listed in subsection (e).

(2) If, at any time during which the reduced monitoring frequency prescribed under subdivision (1) applies, the results from any analysis taken by the system for maximum TTHM potential are equal to or greater than ten-hundredths (0.10) milligram per liter, and such results are confirmed by at least one (1) check sample taken promptly after such results are received, the system shall immediately begin monitoring in accordance with the requirements of subsection (b) and such monitoring shall continue for at least one (1) year before the frequency may be reduced again. In the event of any significant change to the system's source of water or treatment program, the system shall immediately analyze an additional sample for maximum TTHM potential taken at a point in the distribution system reflecting maximum residence time of the water in the system for the purpose of determining whether the system must comply with monitoring requirements of subsection (b). At the discretion of the commissioner, monitoring frequencies may and should be increased above the minimum in those cases where this is necessary to detect variation of TTHM levels within the distribution system.

(d) Compliance with section 5 of this rule for TTHM shall be determined based on a running annual average of quarterly samples collected by the system as prescribed in subsection (b)(1) or (b)(2). If the average of samples covering any four (4) consecutive quarterly periods exceeds the MCL, the supplier of water shall report to the commissioner under section 13 of this rule and notify the public under 327 IAC 8-2.1-7 through 327 IAC 8-2.1-16. Monitoring after public notification shall be at a frequency designated by the commissioner and shall continue until a monitoring schedule as a condition to an enforcement action shall become effective.

(e) Samples for TTHM shall be dechlorinated upon collection to prevent further production of trihalomethanes according to the

procedures described in the methods, except acidification is not required if only TTHMs or THMs are to be determined. Samples for maximum TTHM potential should not be dechlorinated and should be held for seven (7) days at twenty-five (25) degrees Celsius or above prior to analysis. Analyses made under this section shall be conducted by one (1) of the following U.S. EPA approved methods:

(1) Method 502.2, Rev 2.1*.

(2) Method 524.2*.

(3) Method 551.1*.

(f) Before a community water system makes any significant modifications to its existing treatment process for the purpose of achieving compliance with the MCL established in section 5(a) of this rule, such system must submit and obtain the commissioner's approval of a detailed plan setting forth its proposed modification and those safeguards that it will implement to ensure that the bacteriological quality of the drinking water served by such system will not be adversely affected by such modification. Each system shall comply with the provisions set forth in the approved plan. At a minimum, a plan approved by the commissioner shall require the system modifying its disinfection practice to do the following:

(1) Evaluate the water system for sanitary defects and evaluate the source water for biological quality.

(2) Evaluate its existing treatment practices and consider improvements that will minimize disinfectant demand and optimize finished water quality throughout the distribution system.

(3) Provide baseline water quality survey data of the distribution system. Such data should include the results from monitoring for coliform and fecal coliform bacterial, fecal streptococci, standard plate counts at thirty-five (35) degrees Celsius and twenty (20) degrees Celsius, phosphate, ammonia nitrogen, and total organic carbon. Virus studies should be required where source waters are heavily contaminated with sewage effluent.

(4) Conduct additional monitoring to assure continued maintenance of optimal biological quality in finished water, for example, when chloramines are introduced as disinfectants or when prechlorination is being discontinued. Additional monitoring may also be required by the commissioner for chlorate, chlorite, and chlorine dioxide when chlorine dioxide is used. Standard plate count analysis may also be required by the commissioner as appropriate before and after any modifications.

(5) Consider inclusion in the plan provisions to maintain an active disinfectant residual throughout the distribution system at all times during and after modification.

(g) The water sample for determination of maximum trihalomethane potential is taken from a point in the distribution system that reflects maximum residence time. Procedures for sample collection and handling are given in the methods. No reducing agent is added to quench the chemical reaction producing THMs at the time of sample collection. The intent is to permit the levels of THM precursors to be depleted and the concentration of THMs to be maximized for the supply to be tested. Four (4) experimental parameters affecting maximum THM production are pH, temperature, reaction time, and the presence of a disinfectant residual. These parameters are dealt with as follows:

(1) Measure the disinfectant residual at the selected sampling point. Proceed only if a measurable disinfectant residual is present.

(2) Collect triplicate forty (40) milliliter water samples at the pH prevailing at the time of sampling and prepare a method blank according to the methods.

(3) Seal and store these samples together for seven (7) days at twenty-five (25) degrees Celsius or above.

(4) After this time period, open one (1) of the sample containers and check for disinfectant residual. Absence of a disinfectant residual invalidates the sample for further analysis. Once a disinfectant residual has been demonstrated, open another of the sealed samples and determine total THM concentration using a method specified in subsection (e).

(h) The requirements in subsections (a) through (g) apply to each subpart H CWS which serves a population of ten thousand (10,000) or more individuals until December 31, 2001. The requirements in subsections (a) through (g) apply to each CWS which uses only ground water not under the direct influence of surface water that add a disinfectant (oxidant) in any part of the treatment process and serves a population of ten thousand (10,000) or more individuals until December 31, 2003. After the above dates expire, the requirements of 327 IAC 8-2.5 apply to these systems.

*The methods referenced in this section may be obtained as follows:

(1) Method 502.2, Rev 2.1 may be found in "Methods for the Determination of Organic Compounds in Drinking Water, Supplement III", EPA/600/R-95-131, August 1995, available from NTIS, PB95-261616, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, (800) 553-6847.

(2) Method 551.1 may be found in "Methods for the Determination of Organic Compounds in Drinking Water–Supplement III", EPA/600/R-95-131, August 1995, available from NTIS, PB95-261616, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, (800) 553-6847.

(3) Method 524.2 may be found in "Methods for the Determination of Organic Compounds in Drinking Water–Supplement II", EPA-600/R-92-129, August 1992, available from NTIS, PB92-207703, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161, (800) 553-6847.

These methods are available for copying at the Indiana Department of Environmental Management, Office of Water Quality, 100 North Senate Avenue, Room 1255, Indianapolis, Indiana 46206. *(Water Pollution Control Board; 327 IAC 8-2-5.3; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1011; filed Aug 24, 1994, 8:15 a.m.: 18 IR 37; errata filed Oct 11, 1994, 2:45 p.m.: 18 IR 531; filed Aug 25, 1997, 8:00 a.m.: 21 IR 49; errata filed Dec 10, 1997, 3:45 p.m.: 21 IR 1348; filed Jul 23, 2001, 1:02 p.m.: 24 IR 3958; filed Nov 20, 2001, 10:20 a.m.: 25 IR 1086)*

SECTION 4. 327 IAC 8-2-8.5 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-8.5 Requirement for filtration and disinfection

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 8.5. (a) Effective June 29, 1993, a public water system that uses a surface water source must provide filtration in accordance with this section.

(b) A public water system that uses a ground water source under the direct influence of surface water shall provide filtration in accordance with this section beginning eighteen (18) months after the commissioner determines that it is under the direct influence of surface water from the date specified in section 8.2 of this rule.

(c) A public water system that uses a surface water source or a ground water source under the direct influence of surface water must provide treatment consisting of both disinfection, as specified in

section 8.6 of this rule and filtration treatment. Filtration treatment shall be done by one (1) of the following techniques, and the turbidity level of representative samples of a system's filtered water, regardless of filtration technique used, shall at no time exceed five (5) nephelometric turbidity units (NTU) in any given sample, measured as specified in section 8.7 of this rule:

(1) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to one-half (0.5) NTU in at least ninety-five percent (95%) of the total number of measurements taken each month, measured as specified in sections 8.7(4) and 8.8(b) of this rule, except that if the commissioner determines that the system is capable of achieving at least ninety-nine and nine-tenths percent (99.9%) removal and/or inactivation of Giardia lamblia cysts at some turbidity level higher than one-half (0.5) NTU in at least ninety-five percent (95%) of the total number of measurements taken each month, the commissioner may substitute this higher turbidity limit for that system. However, in no case may the commissioner approve a turbidity limit that allows more than one (1) NTU in more than five percent (5%) of the samples taken each month, measured as specified in sections 8.7(4) and 8.8(b) of this rule. **Upon the effective date of this rule, systems serving a population of at least ten thousand (10,000) individuals shall meet the turbidity requirements in 327 IAC 8-2.6-3.**

(2) For systems using slow sand filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to one (1) NTU in at least ninety-five percent (95%) of the measurements taken each month, measured as specified in sections 8.7(4) and 8.8(b) of this rule, except where the commissioner determines that there is no significant interference with disinfection at a higher turbidity level.

(3) For systems using diatomaceous earth filtration, the turbidity level of representative samples of a public water system's filtered water must be less than or equal to one (1) NTU in at least ninety-five percent (95%) of the measurements taken each month, measured as specified in sections 8.7(4) and 8.8(b) of this rule.

(4) A public water system may use a filtration technology not listed in this subsection if it demonstrates to the commissioner, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of section 8.6 of this rule, consistently achieves ninety-nine and nine-tenths percent (99.9%) removal and/or inactivation of Giardia lamblia cysts and ninety-nine and ninety-nine hundredths percent (99.99%) removal and/or inactivation of viruses. For a system that makes this demonstration, the requirements of this subsection apply. **Upon the effective date of this rule, systems serving a population of at least ten thousand (10,000) individuals shall meet the requirements for other filtration technologies in 327 IAC 8-2.6-3.**

(d) During plant operation, each public water system subject to this section shall be operated only by personnel who have been certified by the commissioner under 327 IAC 8-11 through 327 IAC 8-12.

(e) In addition to complying with requirements in this section, systems serving a population of at least ten thousand (10,000) individuals shall also comply with the requirements in 327 IAC 8-2.6-1. *(Water Pollution Control Board; 327 IAC 8-2-8.5; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1024; errata filed Apr 5, 1991, 3:30 p.m.: 14 IR 1626; errata, 14 IR 1730; filed Apr 12, 1993, 11:00 a.m.: 16 IR 2160)*

SECTION 5. 327 IAC 8-2-13 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-13 Reporting requirements; test results and failure to comply

Authority: IC 13-13-5; IC 13-14-8-7; IC 13-14-9; IC 13-18-3; IC 13-18-16
Affected: IC 13-18

Sec. 13. (a) Except where a shorter period is specified in this rule, the supplier of water or the certified laboratory, **as certified by the Commissioner,** provided the supplier of water has granted permission in writing to the laboratory using forms provided by the commissioner, and that permission is on file with the commissioner, shall report to the commissioner the results of any test measurement or analysis required by this rule within:

(1) the first ten (10) days following the month in which the result is received; or

(2) the first ten (10) days following the end of the required monitoring period as stipulated by the commissioner, whichever is shorter.

(b) The supplier of water or the certified laboratory, **as certified by the commissioner,** provided the supplier of water has granted permission in writing to the laboratory using forms provided by the commissioner, and that permission is on file with the commissioner, shall report to the commissioner within forty-eight (48) hours of completion of laboratory analysis the failure to comply with any MCL and any other requirement set forth in this rule by telephone or the methods specified in subsection (e) of this section. If notification is made by telephone, the results must follow using one (1) of the methods specified in subsection (e) within forty-eight (48) hours of the telephone notification.

(c) The supplier of water or the certified laboratory, **as certified by the commissioner,** provided the supplier of water has granted permission in writing to the laboratory using forms provided by the commissioner, and that permission is on file with the commissioner, shall report to the commissioner within (48) hours of completion of laboratory analysis any positive total coliform results by telephone or the methods specified in subsection (e). If notification is made by telephone, the results must follow using one (1) of the methods specified in subsection (e) within forty-eight (48) hours of the telephone notification.

(d) The supplier of water, within ten (10) days of completing the public notification required by 327 IAC 8-2.1-7 through 327 IAC 8-2.1-16, for the initial public notice and any repeat notices, shall submit to the commissioner a certification that it has fully complied with the public notification regulations. The public water system must include with this certification a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the system or to the media.

(e) The submittal of the information required under this section shall be submitted in one (1) of the following manners:

(1) Mail.

(2) Facsimile.

(3) Electronic mail.

(4) Hand delivery.

(5) Other means determined by the commissioner to provide the degree of confidentiality, reliability, convenience, and security appropriate to the information to be submitted.

(Water Pollution Control Board; 327 IAC 8-2-13; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1030; filed Jul 23, 2001, 1:02 p.m.: 24 IR 3974; filed

Nov 20, 2001, 10:20 a.m.: 25 IR 1096; errata filed Feb 22, 2002, 2:01 p.m.: 25 IR 2254)

SECTION 6. 327 IAC 8-2-30 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-30 Maximum contaminant level goals; organic compounds

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 30. (a) MCLGs are zero (0) for the following organic compounds:

(1) Benzene.
(2) Vinyl chloride.
(3) Carbon tetrachloride.
(4) 1,2-dichloroethane.
(5) Trichloroethylene.
(6) Acrylamide.
(7) Alachlor.
(8) Chlordane.
(9) Dibromochloropropane.
(10) 1,2-dichloropropane.
(11) Epichlorohydrin.
(12) Ethylene dibromide.
(13) Heptachlor.
(14) Heptachlor epoxide.
(15) Pentachlorophenol.
(16) Polychlorinated biphenyls (PCBs).
(17) Tetrachloroethylene.
(18) Toxaphene.
(19) Benzo[a]pyrene.
(20) Dichloromethane.
(21) Di(2-ethylhexyl)phthalate.
(22) Hexachlorobenzene.
(23) 2,3,7,8-TCDD (dioxin).

(b) MCLGs for the following organic compounds are as follows:

Contaminant	MCLG in Milligrams Per Liter
1,1-dichloroethylene	0.007
1,1,1-trichloroethane	0.20
para-dichlorobenzene	0.075
Aldicarb	0.001
Aldicarb sulfoxide	0.001
Aldicarb sulfone	0.001
Atrazine	0.003
Carbofuran	0.04
Ortho-dichlorobenzene	0.6
cis-1,2-dichloroethylene	0.07
trans-1,2-dichloroethylene	0.1
2,4-D	0.07
Ethylbenzene	0.7
Lindane	0.0002
Methoxychlor	0.04
Monochlorobenzene	0.1
Styrene	0.1
Toluene	1
2,4,5-TP	0.05
Xylenes	10
Dalapon	0.2
Di(2-ethylhexyl)adipate	0.4
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Glyphosate	0.7
Hexachlorocyclopentadiene	0.05
Oxamyl (vydate)	0.2
Picloram	0.5
Simazine	0.004
1,2,4-trichlorobenzene	0.07
1,1,2-trichloroethane	0.003

(c) MCLGs for the following disinfection byproducts are as follows:

Disinfection byproduct	MCLG(mg/L)
Bromodichloromethane	**0**
Bromoform	**0**
Bromate	**0**
Dichloroacetic acid	**0**
Trichloroacetic acid	**0.3**
Chlorite	**0.8**
Dibromochloromethane	**0.06**

(Water Pollution Control Board; 327 IAC 8-2-30; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1047; filed Aug 24, 1994, 8:15 a.m.: 18 IR 66)

SECTION 7. 327 IAC 8-2-31 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2-31 Maximum contaminant level goals; microbiological contaminants

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 31. Maximum contaminant level goals (MCLGs) are zero (0) for the following microbiological contaminants:

(1) Giardia lamblia.
(2) Viruses.
(3) Legionella.
(4) Total coliforms (including fecal coliforms and Escherichia coli).
(5) Cryptosporidium

(Water Pollution Control Board; 327 IAC 8-2-31; filed Dec 28, 1990, 5:10 p.m.: 14 IR 1047)

SECTION 8. 327 IAC 8-2.1-3, AS AMENDED AT 25 IR 1098, SECTION 14, IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2.1-3 Content of the reports

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9
Affected: IC 13-18-16

Sec. 3. (a) A community water system shall provide to its customers an annual report that contains the information specified in this section and section 4 of this rule.

(b) The report must contain information on the source of the water delivered, including the following:

(1) The source or sources of water delivered by the community water system by including information on:
  (A) the type of water, such as surface water or ground water; and
  (B) the commonly used name, if any, and location of the body or bodies of water.
(2) If a source water assessment has been completed, the report must

notify the consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the commissioner, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the commissioner or written by the operator.

(c) The report must include the following definitions:
(1) "Maximum contaminant level goal" or "MCLG" means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
(2) "Maximum contaminant level" or "MCL" means the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

(d) A report that contains data on contaminants that the department or EPA regulates and uses any of the following terms must include definitions, as applicable, of the terms used:
(1) "Treatment technique" means a required process intended to reduce the level of a contaminant in drinking water.
(2) "Action level" means the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system shall follow.

(e) A report must include the information specified in this subsection for the following contaminants subject to mandatory monitoring, other than Cryptosporidium:
(1) Contaminants subject to an MCL, action level, or treatment technique, hereafter referred to as regulated contaminants.
(2) Disinfection byproducts or microbial contaminants for which monitoring is required by 40 CFR 141.142* and 40 CFR 141.143*, except as provided in subsection (e)(1), and that are detected in the finished water.
(3) The data relating to these contaminants must be displayed in one (1) table or in several adjacent tables. Any additional monitoring results that a community water system chooses to include in its report must be displayed separately.
(4) The data must be derived from data collected to comply with EPA and department monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter, except the following:
(A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the table or tables must include the date and results of the most recent sampling, and the report must include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than five (5) years need be included.
(B) Results of monitoring in compliance with 40 CFR 141.142* and 40 CFR 141.143* need only be included for five (5) years from the date of the last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.
(5) For detected regulated contaminants listed in section 6(a) of this rule, the table or tables must contain the following information:
(A) The MCL for that contaminant expressed as a number equal to or greater than one and zero tenths (1.0), as listed in section 6(a) of this rule.
(B) The MCLG for that contaminant expressed in the same units as the MCL.
(C) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report shall include the definitions for treatment technique or action level, or both, as appropriate, specified in subsection (c)(4).
(D) For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with this rule and the range of detected levels as follows:
(i) When compliance with the MCL is determined annually or less frequently, the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.
(ii) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point, the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.
(iii) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points, the average and range of detection expressed in the same units as the MCL.
(E) When turbidity is reported pursuant to 327 IAC 8-2-8.8 **or 327 IAC 8-2.6-3**, the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 327 IAC 8-2-8.8 **or 327 IAC 8-2.6-3** for the filtration technology being used. The report must include an explanation of the reasons for measuring turbidity.
(F) For lead and copper, the ninetieth percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level.
(G) For total coliform, the highest monthly:
(i) number of positive samples for systems collecting fewer than forty (40) samples per month; or
(ii) percentage of positive samples for systems collecting at least forty (40) samples per month.
(H) For fecal coliform, the total number of positive samples.
(I) The likely source or sources of detected contaminants to the best of the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and must be used when available to the operator. If the operator lacks specific information on the likely source, the report must include one (1) or more of the typical sources for that contaminant listed in section 6(b) of this rule that are most applicable to the system.
(6) If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources:
(A) the table must contain a separate column for each service area and the report must identify each separate distribution system; or
(B) the system may produce separate reports tailored to include data for each service area.
(7) The table must clearly identify any data indicating violations of MCLs or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation, including the length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system shall use the relevant language of section 6(c) of this rule.

(f) Each report must contain the following information on Cryptosporidium, radon, and other contaminants:

(1) If the system has performed any monitoring for Cryptosporidium, including monitoring performed to satisfy the requirements of 40 CFR 141.143*, that indicates Cryptosporidium may be present in the source water or the finished water, the report must include:

(A) a summary of the results of the monitoring; and

(B) an explanation of the significance of the results.

(2) If the system has performed any monitoring for radon that indicates radon may be present in the finished water, the report must include:

(A) the results of the monitoring; and

(B) an explanation of the significance of the results.

(3) If the system has performed additional monitoring that indicates the presence of other contaminants in the finished water, the commissioner strongly encourages systems to report any results that may indicate a health concern. To determine if results may indicate a health concern, the commissioner recommends that systems find out if EPA has proposed a National Primary Drinking Water Regulation (NPDWR) or issued a health advisory for that contaminant by calling the Safe Drinking Water Hotline at (800) 426-4791. The commissioner and EPA consider levels detected above a proposed federal or state MCL or health advisory level to indicate possible health concerns. For such contaminants, the commissioner recommends that the report includes:

(A) the results of the monitoring; and

(B) an explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

(g) In addition to the requirements of subsection (d)(5), the report must note any violation of a requirement listed in this subsection that occurred during the year covered by the report, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation. Violations of the following requirements must be included:

(1) Monitoring and reporting of compliance data.

(2) Filtration and disinfection prescribed by 327 IAC 8-2-8.5 and 327 IAC 8-2-8.6. For systems that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the report must include the following language as part of the explanation of potential health effects, "inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.".

(3) Lead and copper control requirements prescribed by 327 IAC 8-2-36 through 327 IAC 8-2-47. For systems that fail to take one (1) or more actions prescribed by 327 IAC 8-2-36(d) or 327 IAC 8-2-40 through 327 IAC 8-2-43, the report must include the applicable language from section 6(c) of this rule for lead or copper, or both.

(4) Treatment techniques for acrylamide and epichlorohydrin prescribed by 327 IAC 8-2-35. For systems that violate 327 IAC 8-2-35, the report shall include the relevant language from section 6(c) of this rule.

(5) Record keeping of compliance data.

(6) Special monitoring requirements prescribed by 327 IAC 8-2-21.

(7) Violation of the terms of an administrative or judicial order.

(h) The following additional information must be contained in the report:

(1) A brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the language in clauses (A) through (C), or systems may use their own comparable language. The report must also include the language of clause (D). The language is as follows:

(A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

(B) Contaminants that may be present in source water include the following:

(i) Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(ii) Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(iii) Pesticides and herbicides, that may come from a variety of sources, such as agriculture, urban stormwater run-off, and residential uses.

(iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater run-off, and septic systems.

(v) Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

(C) In order to ensure that tap water is safe to drink, the department and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Federal Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

(D) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

(2) The telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

(3) In communities with a large proportion of non-English speaking residents, in which twenty percent (20%) or more of the residents speak the same language other than English, the report must contain information in the appropriate language or languages regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(4) The report must include information about opportunities for public participation in decisions that may affect the quality of water. This information may include, but is not limited to, the time and place of regularly scheduled board meetings.

(5) The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

*The Code of Federal Regulations (CFR) citations are incorporated by reference into this rule and are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 or from the Indiana Department of Environmental Management, Office of Water Quality, Indiana Government Center-North, Twelfth Floor,

Room 1255, 100 North Senate Avenue, Indianapolis, Indiana 46206. *(Water Pollution Control Board; 327 IAC 8-2.1-3; filed Mar 22, 2000, 3:23 p.m.: 23 IR 1899; filed Jul 23, 2001, 1:02 p.m.: 24 IR 3982; filed Nov 20, 2001, 10:20 a.m.: 25 IR 1098)*

SECTION 9. 327 IAC 8-2.1-4 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2.1-4 Required additional health information

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9
Affected: IC 13-18-16

Sec. 4. (a) A report must prominently display the language: "Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. Environmental Protection Agency and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.".

(b) If a system detects arsenic at levels above twenty-five (25) micrograms per liter, but below the MCL, it shall do one (1) of the following:

(1) Include in its report the language: "The U.S. Environmental Protection Agency is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally-occurring mineral known to cause cancer in humans at high concentrations.".

(2) Write its own educational statement, if such statement is written in consultation with the commissioner, and include that statement in the report.

(c) If a system detects nitrate at levels above five (5) milligrams per liter, but below the MCL, it shall do one (1) of the following:

(1) Include in its report the language: "Nitrate in drinking water at levels above ten (10) parts per million is a health risk for infants of less than six (6) months of age. High nitrate levels in drinking water can cause blue-baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, seek advice from your health care provider.".

(2) Write its own educational statement, if such statement is written in consultation with the commissioner, and include that statement in the report.

(d) If a system detects lead above the action level in more than five percent (5%), and up to and including ten percent (10%), of homes sampled, it shall do one (1) of the following:

(1) Include in its report the language: "Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for thirty (30) seconds to two (2) minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791.".

(2) Write its own educational statement, if such statement is written in consultation with the commissioner, and include that statement in the report.

(e) If a system detects total trihalomethanes above eight-hundredths (0.08) milligrams per liter, but below the MCL in 327 IAC 8-2-5(a), as an annual average, monitored and calculated under the provisions of 327 IAC 8-2-5.3, it shall include in its report the health effects language in ~~section 6(c)(5)(S)~~ **table 17(G)(74) contained in section 17** of this rule. *(Water Pollution Control Board; 327 IAC 8-2.1-4; filed Mar 22, 2000, 3:23 p.m.: 23 IR 1902)*

SECTION 10. 327 IAC 8-2.1-8, AS ADDED AT 25 IR 1110, SECTION 17, IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2.1-8 Tier 1 public notice; form, manner, and frequency of notice

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9
Affected: IC 13-18-16

Sec. 8. (a) The following violations or situations require a Tier 1 public notice:

(1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system as specified in 327 IAC 8-2-7(b), or the water system fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform as specified in 327 IAC 8-2-8.3.

(2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in 327 IAC 8-2-4, or when the water system fails to take a confirmation sample within twenty-four (24) hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in 327 IAC 8-2-4.1(h)(2).

(3) Exceedance of the nitrate MCL by noncommunity water systems, where permitted to exceed the MCL by the commissioner under 327 IAC 8-2-4.

(4) Violation of the 327 IAC 8-2-8.5(c) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit as identified in section 16 of this rule, where the commissioner determines after consultation that a Tier 1 notice is required or where consultation does not take place within twenty-four (24) hours after the system learns of the violation.

(5) Occurrence of a waterborne disease outbreak, as defined in 327 IAC 8-2-1, or other waterborne emergency. This includes failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination.

(6) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short term exposure, as determined by the commissioner either in its regulations or on a case-by-case basis.

(7) Violation of the MRDL for chlorine dioxide as defined in 327 IAC 8-2.5-3(a) and determined according to 327 IAC 8-2.5-5.

(b) Tier 1 public notice needs to be provided as follows:

(1) Provide a public notice as soon as practical but no later than twenty-four (24) hours after the system learns of the violation.

(2) Initiate consultation with the commissioner as soon as practical, but no later than twenty-four (24) hours after the public water system learns of the violation or situation, to determine additional public notice requirements.

(3) Comply with any additional public notification requirements that are established as a result of the consultation with the commissioner, including any repeat notices or direction on the duration of the posted notices. To reach all persons served, such requirements may include:
(A) timing;
(B) form;
(C) manner;
(D) frequency; and
(E) content of repeat notices and other actions designed.
(4) Public water systems must provide the notice within twenty-four (24) hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system are to fit the specific situation, but must be designed to reach residential, transient, and nontransient users of the water system. In order to reach all persons served, water systems are to use, at a minimum, one (1) or more of the following forms of delivery:
(A) Appropriate broadcast media, such as:
(i) radio; or
(ii) television.
(B) Posting of the notice in conspicuous locations throughout the area served by the water system.
(C) Hand delivery of the notice to persons served by the water system.
(D) Another delivery method approved in writing by the commissioner.

(5) A community public water system shall give a copy of the most recent public notice to all new billing units or new hookups prior to or at the time service begins for any of the following outstanding violations:
(A) Any maximum contaminant level.
(B) Any maximum residual disinfectant level.
(C) Any treatment technique requirement.
(D) Any variance or exemption schedule.

(c) For violations of the MRDLs of disinfectants that may pose an acute risk to human health, a copy of the notice must be furnished to the radio and television stations serving the area served by the public water system as soon as possible but in no case later than seventy-two (72) hours after the violation. *(Water Pollution Control Board; 327 IAC 8-2.1-8; filed Nov 20, 2001, 10:20 a.m.: 25 IR 1110)*

SECTION 11. 327 IAC 8-2.1-16 IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2.1-16 Drinking water violations; other situations requiring public notice

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9
Affected: IC 13-18-16

Sec. 16. Drinking water violations and other situations that require public notice according to this rule are contained in the following table:

Table 16. Drinking Water Violations and Other Situations Requiring Public Notice

Contaminant	MCL/MRDL/TT/AL Violations		Monitoring and Testing Procedure Violations	
	Tier of Public Notice Required	Citation	Tier of Public Notice Required	Citation
I. Violations of Drinking Water Regulations:				
A. Microbiological Contaminants				
1. Total coliform	2	327 IAC 8-2-7(a)	3	327 IAC 8-2-8 327 IAC 8-2-8.1 327 IAC 8-2-8(f) 327 IAC 8-2-8.2 327 IAC 8-2-8.3
2. Fecal coliform/E. coli	1	327 IAC 8-2-7(b)	1, 3	327 IAC 8-2-8.3
3. Turbidity TT (resulting from a single exceedance of maximum allowable turbidity levels)	2,1	327 IAC 8-2-8.5(a)	3	327 IAC 8-2-8.8(b)
4. Surface Water Treatment Rule violations, other than violations resulting from single exceedance of maximum allowable turbidity level (TT)	2	327 IAC 8-2-8.5 327 IAC 8-2-8.6	3	327 IAC 8-2-8.8
5. Filter Backwash Recycling Rule	**2**	**327 IAC 8-2.6-6**	**3**	**327 IAC 8-2.6-6**
B. Inorganic Chemicals (IOCs)				
1. Antimony	2	327 IAC 8-2-4-(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
2. Arsenic	2	327 IAC 8-2-4(d) 327 IAC 8-2-4.1(l)(5)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(l)(3) 327 IAC 8-2-4.1(l)(4)
3. Asbestos (fibers >10 μm)	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(d)
4. Barium	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
5. Beryllium	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
6. Cadmium	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)

7. Chromium (total)	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
8. Cyanide	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
9. Fluoride	2	327 IAC 8-2-4(c)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
10. Mercury (inorganic)	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
11. Nitrate	1	327 IAC 8-2-4(b)	1, 3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(f) 327 IAC 8-2-4.1(h)(2)
12. Nitrite	1	327 IAC 8-2-4(b)	1, 3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(g) 327 IAC 8-2-4.1(h)(2)
13. Total Nitrate and Nitrite	1	327 IAC 8-2-4(b)	3	327 IAC 8-2-4.1(c)
14. Selenium	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
15. Thallium	2	327 IAC 8-2-4(d)	3	327 IAC 8-2-4.1(c) 327 IAC 8-2-4.1(e)
C. Lead and Copper Rule				
1. Lead and Copper Rule (TT)	2	327 IAC 8-2-36 327 IAC 8-2-40 327 IAC 8-2-41 327 IAC 8-2-42 327 IAC 8-2-43 327 IAC 8-2-44	3	327 IAC 8-2-37 327 IAC 8-2-38 327 IAC 8-2-39 327 IAC 8-2-45
D. Synthetic Organic Chemicals (SOCs)				
1. 2,4-D	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
2. 2,4,5-TP (Silvex)	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
3. Alachlor	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
4. Atrazine	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
5. Benzo(a)pyrene (PAHs)	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
6. Carbofuran	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
7. Chlordane	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
8. Dalapon	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
9. Di (2-ethylhexyl) adipate	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
10. Di (2-ethylhexyl) phthalate	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
11. Dibromochloropropane	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
12. Dinoseb	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
13. Dioxin (2,3,7,8-TCDD)	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
14. Diquat	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
15. Endothall	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
16. Endrin	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
17. Ethylene dibromide	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
18. Glyphosate	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
19. Heptachlor	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
20. Heptachlor epoxide	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
21. Hexachlorobenzene	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
22. Hexachlorocyclopentadiene	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
23. Lindane	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
24. Methoxychlor	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
25. Oxamyl (Vydate)	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
26. Pentachlorophenol	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
27. Picloram	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
28. Polychlorinated biphenyls (PCBs)	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
29. Simazine	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1

30. Toxaphene	2	327 IAC 8-2-5(a)	3	327 IAC 8-2-5.1
E. Volatile Organic Chemicals (VOCs)				
1. Benzene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
2. Carbon tetrachloride	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
3. Chlorobenzene (monochlorobenzene)	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
4. o-Dichlorobenzene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
5. p-Dichlorobenzene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
6. 1,2-Dichloroethane	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
7. 1,1-Dichloroethylene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
8. cis-1,2-Dichloroethylene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
9. trans-1,2-Dichloroethylene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
10. Dichloromethane	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
11. 1,2-Dichloropropane	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
12. Ethylbenzene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
13. Styrene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
14. Tetrachloroethylene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
15. Toluene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
16. 1,2,4-Trichlorobenzene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
17. 1,1,1-Trichloroethane	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
18. 1,1,2-Trichloroethane	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
19. Trichloroethylene	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
20. Vinyl chloride	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
21. Xylenes (total)	2	327 IAC 8-2-5.4(a)	3	327 IAC 8-2-5.5
F. Radioactive Contaminants				
1. Beta/photon emitters	2	327 IAC 8-2-10	3	327 IAC 8-2-10.2 327 IAC 8-2-10.2(b)
2. Alpha emitters	2	327 IAC 8-2-9(2)	3	327 IAC 8-2-10.2 327 IAC 8-2-10.2(a)
3. Combined radium (226 and 228)	2	327 IAC 8-2-9(1)	3	327 IAC 8-2-10.2 327 IAC 8-2-10.2(a)
G. Disinfection Byproducts (DBPs). Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of DBPs in drinking water.				
1. Total trihalomethanes (TTHMs)	2	327 IAC 8-2-5(a) and 327 IAC 8-2-5(c)	3	327 IAC 8-2-5.3
H. Other Treatment Techniques				
1. Acrylamide (TT)	2	327 IAC 8-2-35	N/A	N/A
2. Epichlorohydrin (TT)	2	327 IAC 8-2-35	N/A	N/A
II. Unregulated Contaminant Monitoring:				
A. Nickel	N/A	N/A	3	327 IAC 8-2-4.1(e)
III. Other Situations Requiring Public Notification:				
A. Fluoride secondary maximum contaminant level (SMCL) exceedance	3	40 CFR § 143.3*	N/A	N/A
B. Exceedance of nitrate MCL for noncommunity systems, as allowed by the commissioner	1	327 IAC 8-2-4(b)	N/A	N/A
C. Waterborne disease outbreak	1	327 IAC 8-2-1	N/A	N/A
D. Other waterborne emergency	1	N/A	N/A	N/A
E. Other situations as determined by the commissioner	1, 2, 3	N/A	N/A	N/A

Key:

MCL - Maximum contaminant level

TT - Treatment Technique

Violations of Drinking Water Regulations is used here to included violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

(1) Violations and other situations not listed in this table, such as reporting violations and failure to prepare Consumer Confidence Report do not require notice, unless otherwise determined by the commissioner. The commissioner may, ~~optionally,~~ **at their option,** also require a more stringent public notice tier such as Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3 for specific violations and situations listed in the table above.

(2) Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3.

(3) Systems with treatment technique violations involving a single exceedance of maximum turbidity limit under the surface water treatment rule (SWTR) are required to initiate consultation with the commissioner within twenty-four (24) hours after learning of the violation. Based on this consultation, the commissioner may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the commissioner in the twenty-four (24) hour period, the violation is automatically elevated to Tier 1.

(4) Failure to take a confirmation sample within twenty-four (24) hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 Violation. Other monitoring violations for nitrate are Tier 3.

(5) Other waterborne emergencies require a Tier 1 public notice under section 8(a) of this rule for situations that do not meet the definition of a waterborne disease outbreak given in 327 IAC 8-2-1, but that still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

(6) The commissioner may place other situations in any tier believed appropriate, based on threat to public health.

*40 CFR 143.3 is incorporated by reference and is available for copying at the Indiana Department of Environmental Management, Office of Water Quality, 100 North Senate Avenue, Room 1255, Indianapolis, Indiana 46206. *(Water Pollution Control Board; 327 IAC 8-2.1-16; filed Nov 20, 2001, 10:20 a.m.: 25 IR 1115; errata filed Feb 22, 2002, 2:06 p.m.: 25 IR 2254)*

SECTION 12. 327 IAC 8-2.1-17, AS ADDED AT 25 IR 1118, SECTION 26, IS AMENDED TO READ AS FOLLOWS:

327 IAC 8-2.1-17 Drinking water violations; standard health effects language for public notice

Authority: **IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9**
Affected: **IC 13-18-16**

Sec. 17. A public water system must comply with the standard health effects language for public notification contained in the following table:

Table 17. Standard Health Effects Language for Public Notification

Contaminant	MCLG mg/L	MCL mg/L	Standard Health Effects Language for Public Notification
Drinking Water Regulations:			
A. Microbiological Contaminants, **Surface Water Treatment Rule, and Interim Enhanced Surface Water Treatment Rule**			
1a. Total coliform	Zero	See footnote	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/E. coli	Zero	Zero	Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
2a. Turbidity (MCL)	None	1 NTU/5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2b. Turbidity (SWTR TT)	None	TT	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
2c. Giardia Lamblia **2d. Viruses** **2e. Heterotrophic plate county (HPC) bacteria** **2f. Legionella** **2g. Cryptosporidium**	**Zero**	**TT**	**Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms, such as nausea, cramps, diarrhea, and associated headaches.**

B. Inorganic Chemicals (IOCs)			
3. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
4. Arsenic	None	0.05	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
5. Asbestos (>10 μm)	7 MFL	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
6. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
7. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
8. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
9. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
10. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
11. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine (9) years old. Mottling, also known as dental fluorosis, may include brown staining or pitting of the teeth, or both, and occurs only in developing teeth before they erupt from the gums.
12. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
13. Nitrate	10	10	Infants below the age of six (6) months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
14. Nitrite	1	1	Infants below the age of six (6) months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
15. Total Nitrate and Nitrite	10	10	Infants below the age of six (6) months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
16. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
17. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
C. Lead and Copper Rule			
18. Lead	Zero	TT	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
19. Copper	1.3	TT	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

D. Synthetic Organic Chemicals (SOCs)			
20. 2,4-D	0.07	0.07	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
21. 2,4,5-TP (Silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
22. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
23. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
24. Benzo(a)pyrene (PAHs)	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
25. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
26. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
27. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
28. Di (2-ethylhexyl) adipate	0.4	0.4	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.
29. Di (2-ethylhexyl) phthalate	Zero	0.006	Some people who drink water containing di (2-ethylhexyl) phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
30. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
31. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
32. Dioxin (2,3,7,8-TCDD)	Zero	3×10^{-8}	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
33. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
34. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
35. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
36. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
37. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
38. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
39. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

40. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
41. Hexachlorocyclo-pentadiene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
42. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
43. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
44. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
45. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
46. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
47. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
48. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
49. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
E. Volatile Organic Chemicals (VOCs)			
50. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
51. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
52. Chlorobenzene (monochlorobenzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
53. o-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
54. p-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
55. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
56. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
57. cis-1,2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
58. trans-1,2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
59. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
60. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

61. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
62. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
63. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
64. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
65. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
66. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
67. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
68. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
69. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
70. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
F. Radioactive Contaminants			
71. Beta/photon emitters	Zero	4 mrem/yr	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
72. Alpha emitters	Zero	15 pCi/L	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
73. Combined radium (226 and 228)	Zero	5 pCi/L	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
G. Disinfection Byproducts (DBPs): Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water.			
74. Total trihalomethanes (TTHMs)	N/A	0.10/0.080	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
75. Haloacetic Acids (HAA)	**N/A**	**0.060**	**Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.**
76. Bromate	**Zero**	**0.010**	**Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.**
77. Chlorite	**0.08**	**1.0**	**Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.**
78. Chlorine	**4 (MRDLG)**	**4.0 (MRDL)**	**Some people who use drinking water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.**

79. Chloramines	**4 (MRDLG)**	**4.0 (MRDL)**	**Some people who use drinking water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.**
80a. Chlorine dioxide, where any 2 consecutive daily samples taken at the entrance to the distribution system are above the MRDL	**0.8 (MRDLG)**	**0.8 (MRDL)**	**Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.** **Add for public notification only: The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.**
80b. Chlorine dioxide, where one or more distribution system samples are above the MRDL	**0.8 (MRDLG)**	**0.8 (MRDL)**	**Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.** **Add for public notification only: The chlorine dioxide violations reported today include exceedances of the EPA standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.**
81. Control of DBP precursors (TOC)	**None**	**TT**	**Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.**
H. Other Treatment Techniques			
~~75~~. **82.** Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
~~76.~~ **83.** Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

Key:
MCLG - Maximum contaminant level goal
MCL - Maximum contaminant level
NTU - Nephelometric turbidity unit
TT - Treatment technique
MFL - Millions of fiber per liter
Action Level (Lead) = 0.015 mg/L
Action Level (Copper) = 1.3 mg/L
mrem - millirems per year
ppq - picocuries per liter

(1) For water systems analyzing at least forty (40) samples per month, no more than five percent (5.0%) of the monthly samples may be positive for total coliforms. For systems analyzing fewer than forty (40) samples per month, no more than one (1) sample per month may be positive for total coliforms.

(2) The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.

(3) SWTR treatment technique violations that involve turbidity exceedances may use the health effects language for turbidity instead.

(4) The bacteria detected by **heterotrophic plate count** (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.

(5) The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.

(Water Pollution Control Board; 327 IAC 8-2.1-17; filed Nov 20, 2001, 10:20 a.m.: 25 IR 1118; errata filed Feb 22, 2002, 2:01 p.m.: 25 IR 2254)

SECTION 13. 327 IAC 8-2.5 IS ADDED TO READ AS FOLLOWS:

Rule 2.5. Disinfectants and Disinfection

327 IAC 8-2.5-1 Maximum residual disinfectant level goals; disinfectants

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 1. MRDLGs for disinfectants are as follows:

Disinfectant Residual	MRDLG(mg/L)
Chlorine	**4.0 (as Cl_2)**
Chloramines	**4.0 (as Cl_2)**
Chlorine dioxide	**0.8 (as ClO_2)**

(Water Pollution Control Board; 327 IAC 8-2.5-1)

327 IAC 8-2.5-2 Maximum contaminant levels; disinfection byproducts

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 2. (a) The maximum contaminant levels (MCLs) for disinfection byproducts are as follows:

Disinfection byproduct	MCL (mg/L)
Total trihalomethanes (TTHM)	**0.080**
Haloacetic acids (five) (HAA5)	**0.060**
Bromate	**0.010**
Chlorite	**1.0**

(b) A system that is installing GAC or membrane technology to comply with this section may apply to the commissioner for an extension of up to twenty-four (24) months past the dates in 327 IAC 8-2.5-4(b), but not later than December 31, 2003. In granting the extension, the commissioner shall set a schedule for compliance and may specify any interim measures that the system must take.

(c) The commissioner hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts identified in subsection (a):

Disinfection Byproduct	Best Available Technology
TTHM	**Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.**
HAA5	**Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant.**
Bromate	**Control of ozone treatment process to reduce production of bromate.**
Chlorite	**Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.**

(Water Pollution Control Board; 327 IAC 8-2.5-2)

327 IAC 8-2.5-3 Maximum residual disinfectant levels

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 3. (a) Maximum residual disinfectant levels (MRDLs) are as follows:

Disinfectant Residual	MRDL (mg/L)
Chlorine	**4.0 (as Cl_2).**
Chloramines	**4.0 (as Cl_2).**
Chlorine dioxide	**0.8 (as ClO_2).**

(b) The commissioner hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels identified in subsection (a):

(1) Control of treatment processes to reduce disinfectant demand.

(2) Control of disinfection treatment processes to reduce disinfectant levels.

(Water Pollution Control Board; 327 IAC 8-2.5-3)

327 IAC 8-2.5-4 General requirements; disinfectant residuals, disinfection byproducts, and disinfection byproducts precursors

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 4. (a) The general requirements for disinfectant residuals, disinfection byproducts, and disinfection byproducts precursors are as follows:

(1) A CWS or a NTNCWS which adds a chemical disinfectant to the water in any part of the drinking water treatment process, shall modify it's practices to meet MCLs and MRDLs in 327 IAC 8-2.5-2(a) and 327 IAC 8-2.5-3(a), respectively, and shall meet the treatment technique requirements for disinfection byproduct precursors in 327 IAC 8-2.5-9.

(2) A TWS that uses chlorine dioxide as a disinfectant or oxidant shall modify it's practices to meet the MRDL for chlorine dioxide in 327 IAC 8-2.5-3(a).

(b) Compliance dates for CWSs and NTNCWSs are as follows:

(1) A subpart H system serving a population of ten thousand (10,000) or more individuals shall comply with this section upon the effective date of this rule.

(2) A subpart H system serving a population of fewer than ten thousand (10,000) individuals and a system using only ground water not under the direct influence of surface water shall comply with this section beginning January 1, 2004.

(c) Compliance dates for TWSs are as follows:

(1) A subpart H system serving a population of ten thousand (10,000) or more individuals and using chlorine dioxide as a disinfectant or oxidant shall comply with requirements for chlorine dioxide in this section upon the effective date of this rule.

(2) A subpart H system serving a population of fewer than ten thousand (10,000) individuals and using chlorine dioxide as a disinfectant or oxidant and a system using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant shall comply with requirements for chlorine dioxide in this section beginning January 1, 2004.

(d) A CWS or a NTNCWS regulated under subsection (a) must be operated by qualified personnel who meet the requirements specified by 327 IAC 8-12.

(e) Notwithstanding the MRDLs in 327 IAC 8-2.5-3, systems may increase residual disinfectant levels in the distribution system of chlorine or chloramines, but not chlorine dioxide, to a level and for a time necessary to protect public health and to address specific microbiological contamination problems caused by circumstances including the following:

(1) Distribution line breaks.
(2) Storm water run-off events.
(3) Source water contamination events.
(4) Cross-connection events.

(Water Pollution Control Board; 327 IAC 8-2.5-4)

327 IAC 8-2.5-5 Analytical requirements; disinfectant residuals, disinfection byproducts, and disinfection byproducts precursors

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 5. (a) Systems shall use only one (1) or more of the analytical methods specified in this subsection. These methods are incorporated by reference and may be obtained as follows:

(1) EPA Method 552.1 can be found in Methods for the Determination of Organic Compounds in Drinking Water-Supplement II, USEPA, August 1992, EPA/600/R-92/129 (available through National Information Technical Service (NTIS), PB92-207703).
(2) EPA Methods 502.2, 524.2, 551.1, and 552.2 are in Methods for the Determination of Organic Compounds in Drinking Water-Supplement III, USEPA, August 1995, EPA/600/R-95/131. (available through NTIS, PB95-261616).
(3) EPA Methods 300.0 and 150.1 are in Methods for the Determination of Inorganic Substances in Environmental Samples, USEPA, August 1993, EPA/600/R-93/100. (available through NTIS, PB94-121811).
(4) EPA Method 300.1 is titled USEPA Method 300.1, Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0, USEPA, 1997, EPA/600/R-98/118 (available through NTIS, PB98-169196); also available from: Chemical Exposure Research Branch, Microbiological & Chemical Exposure Assessment Research Division, National Exposure Research Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH 45268, Fax Number: 513-569-7757, Phone number: 513-569-7586.
(5) Standard Methods 4500-Cl D, 4500-Cl E, 4500-Cl F, 4500-Cl G, 4500-Cl H, 4500-Cl I, 4500-ClO_2 D, 4500-ClO_2 E, 4500-H^+ B, 6251 B, and 5910 B shall be followed in accordance with Standard Methods for the Examination of Water and Wastewater, 19th Edition, American Public Health Association, 1995; copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005.
(6) Standard Methods 5310 B, 5310 C, and 5310 D shall be followed in accordance with the Supplement to the 19th Edition of Standard Methods for the Examination of Water and Wastewater, American Public Health Association, 1996; copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW, Washington, DC 20005.
(7) ASTM Methods D 1253-86 and D1293-95 shall be followed in accordance with the Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996 edition; copies may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

These methods are also available for copying at the Indiana Department of Environmental Management, Office of Water Quality, 100 North Senate Avenue, N 1254, Indianapolis, IN 46204.

(b) Analytical requirements for disinfection byproducts are as follows:

(1) Systems shall measure disinfection byproducts by the methods, as modified by the footnotes, listed in the following table:

APPROVED METHODS FOR DISINFECTION BYPRODUCT COMPLIANCE MONITORING

			Byproduct Measured[1]			
Methodology[2]	EPA Method	Standard Method	TTHM	HAA5	Chlorite[4]	Bromate
P&T/GC/ElCD & PID	502.2[3]		X			
P&T/GC/MS	524.2		X			
LLE/GC/ECD	551.1		X			
LLE/GC/ECD		6251 B		X		
SPE/GC/ECD	552.1			X		
LLE/GC/ECD	552.2			X		
Amperometric Titration		4500-ClO_2 E			X	
IC	300.0				X	
IC	300.1				X	X

[1]X indicates method is approved for measuring specified disinfection byproduct.

[2]P&T = purge and trap; GC = gas chromatography; ElCD = electrolytic conductivity detector; PID = photoionization detector; MS = mass spectrometer; LLE = liquid/liquid extraction; ECD = electron capture detector; SPE = solid phase extractor; IC = ion chromatography.

[3]If TTHMs are the only analytes being measured in the sample, then a PID is not required.

[4]Amperometric titration may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in 327 IAC 8-2.5-6(b)(2)(A)(i). Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in clauses (A)(ii) and (B) of 327 IAC 8-2.5-6(b)(2).

(2) Analysis under this subsection for disinfection byproducts must be conducted by laboratories that have received certification by the commissioner, except as specified under subsection (b)(3). To receive certification to conduct analyses for the contaminants in 327 IAC 8-2.5-2(a), the laboratory must carry out annual analyses of performance evaluation (PE) samples approved by the commissioner. In these analyses of PE samples, the laboratory must achieve quantitative results within the acceptance limit on a minimum of eighty percent (80%) of the analytes included in each PE sample. The acceptance limit is defined as the ninety-five percent (95%) confidence interval calculated around the mean of the PE study data between a maximum and minimum acceptance limit of +/- fifty percent (50%) and +/- fifteen percent (15%) of the study mean.

(3) A certified operator shall measure daily chlorite samples at the entrance to the distribution system.

(c) Analytical requirements for disinfectant residuals are as follows:

(1) A system shall measure residual disinfectant concentrations for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the methods listed in the following table:

APPROVED METHODS FOR DISINFECTANT RESIDUAL COMPLIANCE MONITORING

			Residual Measured[1]			
Methodology	Standard Method	ASTM Method	Free Chlorine	Combined Chlorine	Total Chlorine	Chlorine Dioxide
Amperometric Titration	4500-Cl D,	D 1253-86	X	X	X	
Low Level Amperometric Titration	4500-Cl E				X	
DPD Ferrous Titrimetric	4500-Cl F		X	X	X	
DPD Colorimetric	4500-Cl G		X	X	X	
Syringaldazine (FACTS)	4500-Cl H		X			
Iodometric Electrode	4500-Cl I				X	
DPD	4500-ClO_2 D					X
Amperometric Method II	4500-ClO_2 E					X

[1]X indicates method is approved for measuring specified disinfectant residual.

(2) If approved by the commissioner, a system may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.

(3) Residual disinfectant concentration may be measured only by a certified operator.

(d) Systems required to analyze parameters not included in subsections (b) and (c) shall use the following methods:

(1) All methods allowed in 327 IAC 8-2-45 for measuring alkalinity and pH.

(2) For bromide, EPA Method 300.0 or EPA Method 300.1.

(3) A system shall use one or all of the following methods for total organic carbon (TOC):

(A) Standard Method 5310 B (High-Temperature Combustion Method)

(B) Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method)

(C) Standard Method 5310 D (Wet-Oxidation Method).

TOC samples may not be filtered prior to analysis. TOC samples must either be analyzed or must be acidified to achieve pH less than two (2.0) by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed twenty-four (24) hours. Acidified TOC samples must be analyzed within twenty-eight (28) days.

(4) SUVA is equal to the UV absorption at two hundred fifty-four (254) nanometers (UV_{254}) (measured in m^{-1}) divided by the dissolved organic carbon (DOC) concentration (measured as milligrams per liter). In order to determine SUVA, UV_{254} and DOC must be measured separately. When determining SUVA, systems shall use the following methods:

(A) A system shall use one (1) or more of the following methods to measure dissolved organic carbon (DOC):

(i) Standard Method 5310 B (High-Temperature Combustion Method).

(ii) Standard Method 5310 C (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method).

(iii) Standard Method 5310 D (Wet-Oxidation Method).

(B) Prior to analysis under clause (A), DOC samples must be filtered through a forty-five hundredths (0.45) micrometer pore-diameter filter. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following criteria:

(i) DOC < five tenths (0.5) milligrams per liter.

(ii) DOC samples must be filtered through the forty-five hundredths (0.45) micrometer pore-diameter filter prior to acidification.

(iii) DOC samples must either be analyzed or must be acidified to achieve pH less than two (2.0) by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed forty-eight (48) hours.

(iv) Acidified DOC samples must be analyzed within twenty-eight (28) days.

(C) The following apply to a system required to measure UV_{254} under this subdivision:

(i) A system shall use Method 5910 B (Ultraviolet Absorption Method) to measure Ultraviolet Absorption at two hundred fifty-four (254) nanometers (UV_{254}). UV absorption must be measured at two hundred fifty-three and seven tenths (253.7) nanometers (may be rounded off to two hundred fifty four (254) nanometers).

(ii) Prior to analysis, UV_{254} samples must be filtered through a forty-five hundredths (0.45) micrometer pore-diameter filter.

(iii) The pH of UV_{254} samples may not be adjusted.

(iv) Samples must be analyzed as soon as practical after sampling, not to exceed forty-eight (48) hours.

SUVA must be determined on water prior to the addition of disinfectants/oxidants by the system. DOC and UV_{254} samples used to determine a SUVA value must be taken at the same time and at the same location.

(e) Parameters measured under subsection (d) must be measured by a certified operator. *(Water Pollution Control Board; 327 IAC 8-2.5-5)*

327 IAC 8-2.5-6 Monitoring requirements; disinfectant residuals, disinfection byproducts, and disinfection byproducts precursors

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 6. (a) General monitoring requirements for disinfectant residuals, disinfection byproducts, and disinfection byproducts precursors are as follows:

(1) Systems shall take all samples during normal operating conditions.

(2) Systems may consider multiple wells drawing water from a single aquifer as one (1) treatment plant for determining the minimum number of TTHM and HAA5 samples required.

(3) Failure to monitor in accordance with the monitoring plan required under subsection (f) is a monitoring violation.

(4) Failure to monitor will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs.

(5) Systems may use only data collected under the provisions of subsection (b) or 40 CFR 141.140 through 141.144* to qualify for reduced monitoring.

(b) Monitoring requirements for disinfection byproducts are as follows:

(1) TTHM and HAA5 monitoring requirements are as follows:

(A) For routine monitoring, systems shall monitor at the frequency indicated in the following table:

ROUTINE MONITORING FREQUENCY FOR TTHM AND HAA5

Type of System	Minimum Monitoring Frequency	Sample Location in the Distribution System
Subpart H system serving at least 10,000 persons	Four water samples per quarter per treatment plant	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods[1].
Subpart H system serving from 500 to 9,999 persons	One water sample per quarter per treatment plant	Locations representing maximum residence time[1].
Subpart H system serving fewer than 500 persons	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets reduced monitoring criteria in clause (b)(1)(D) of this section.
System using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons	One water sample per quarter per treatment plant[2]	Locations representing maximum residence time[1].
System using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons	One sample per year per treatment plant[2] during month of warmest water temperature	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets criteria in clause (b)(1)(D) of this section for reduced monitoring.

[1] If a system elects to sample more frequently than the minimum required, at least twenty-five percent (25%) of all samples collected each quarter, including those taken in excess of the required frequency, must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

[2] Multiple wells drawing water from a single aquifer may be considered one (1) treatment plant for determining the minimum number of samples required.

(B) Systems may reduce monitoring, except as otherwise provided, in accordance with the following table:

REDUCED MONITORING FREQUENCY FOR TTHM AND HAA5

IF YOU ARE A:	AND YOU HAVE MONITORED AT LEAST ONE YEAR AND YOUR:	YOU MAY REDUCE MONITORING TO THIS LEVEL:
Subpart H system serving at least 10,000 persons which has a source water annual average TOC level, before any treatment, ≤ 4.0 mg/L	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030mg/L	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time
Subpart H system serving from 500 to 9,999 persons which has a source water annual average TOC level, before any treatment, ≤ 4.0 mg/L	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature. NOTE: Any Subpart H system serving fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.
System using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature
System using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030mg/L for two consecutive years OR TTHM annual average ≤0.020 mg/L and HAA5 annual average ≤0.015mg/L for one year	One sample per treatment plant per three year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

(C) Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems which must monitor quarterly) or the result of the sample (for systems which must monitor no more frequently than annually) is no more than sixty thousandths (0.060) milligrams per liter and forty-five thousandths (0.045) milligrams per liter for TTHMs and HAA5, respectively. Systems that do not meet these levels shall resume monitoring at the frequency identified in the table contained in clause (A) (minimum monitoring frequency column) in the quarter immediately following the monitoring period in which the system exceeds those levels. For systems using only ground water not under the direct influence of surface water and serving fewer than ten thousand (10,000) persons, if either the TTHM annual average is greater than eighty thousandths (0.080) milligrams per liter or the HAA5 annual average is greater than sixty thousandths (0.060) milligrams per liter, the system shall go to the increased monitoring identified in the table contained in clause (A) (sample location column) in the quarter immediately following the monitoring period in which the system exceeds those levels.

(D) Systems on increased monitoring may return to routine monitoring if, after at least one (1) year of monitoring their TTHM annual average is equal to or less than sixty thousandths (0.060) milligrams per liter and their HAA5 annual average is equal to or less than forty-five thousandths (0.045) milligrams per liter.

(E) A system may return to routine monitoring at the commissioner's discretion.

(2) CWSs and NTNCWSs using chlorine dioxide for disinfection or oxidation must conduct monitoring for chlorite as follows:

(A) Routine monitoring is as follows:

(i) Systems shall take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system shall take additional samples in the distribution system the following day at the locations required by clause (B), in addition to the sample required at the entrance to the distribution system.

(ii) Systems shall take a three (3) sample set each month in the distribution system. The system shall take one (1) sample at each of the following locations:

(AA) Near the first customer.

(BB) At a location representative of average residence time.

(CC) At a location reflecting maximum residence time in the distribution system.

Any additional routine sampling must be conducted in the same manner (as three (3) sample sets, at the specified locations). The system may use the results of additional monitoring conducted under clause (B) to meet the requirement for monitoring in this clause.

(B) On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the system shall take three (3) chlorite distribution system samples at the following locations:

(i) As close to the first customer as possible.

(ii) In a location representative of average residence time.

(iii) As close to the end of the distribution system as possible.

(C) Monitoring for chlorite may be reduced as follows:

(i) Chlorite monitoring at the entrance to the distribution system required by clause (A)(i) may not be reduced.

(ii) Chlorite monitoring in the distribution system required by clause (A)(ii) may be reduced to one (1) three (3) sample set per quarter after one (1) year of monitoring where no individual chlorite sample taken in the distribution system under clause (A)(ii) has exceeded the chlorite MCL and the system has not been required to conduct monitoring under clause (B). The system may remain on the reduced monitor-

ing schedule unless one (1) of the three (3) individual chlorite samples taken monthly in the distribution system under clause (A)(ii) exceeds the chlorite MCL or the system is required to conduct monitoring under clause (B), at which time the system shall revert to routine monitoring.

(3) Monitoring for bromate is as follows:

(A) CWSs and NTNCWSs using ozone for disinfection or oxidation shall take one (1) sample per month for each treatment plant in the system using ozone. Systems shall take samples monthly at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(B) Systems required to analyze for bromate may reduce monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than five hundredths (0.05) milligrams per liter based upon representative monthly bromide measurements for one (1) year. The system may remain on reduced bromate monitoring unless the running annual average source water bromide concentration, computed quarterly, is equal to or greater than five hundredths (0.05) milligrams per liter based upon representative monthly measurements. If the running annual average source water bromide concentration is equal to or greater than five hundredths (0.05) milligrams per liter, the system shall resume routine monitoring required by clause (A).

(c) Monitoring requirements for disinfectant residuals are as follows:

(1) Monitoring for chlorine and chloramines is as follows:

(A) CWSs and NTNCWSs that use chlorine or chloramines shall measure the residual disinfectant level in the distribution system when total coliforms are sampled, as specified in 327 IAC 8-2-8. Subpart H systems may use the results of residual disinfectant concentration sampling conducted under 327 IAC 8-2-8.8(d) for systems which filter, in lieu of taking separate samples.

(B) Monitoring for chlorine or chloramines may not be reduced.

(2) Monitoring for chlorine dioxide is as follows:

(A) CWSs, NTNCWSs, and TWSs that use chlorine dioxide for disinfection or oxidation shall take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system shall take samples in the distribution system the following day at the locations required by clause (D), in addition to the sample required at the entrance to the distribution system.

(B) On each day following a routine sample monitoring result that exceeds the MRDL, the system is required to take three (3) chlorine dioxide distribution system samples.

(C) If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system for example, no booster chlorination, the system shall take three (3) samples as close to the first customer as possible, at intervals of at least six (6) hours.

(D) If chlorine is used to maintain a disinfectant residual in the distribution system and there are one (1) or more disinfection addition points after the entrance to the distribution system for example, booster chlorination, the system shall take one (1) sample at each of the following locations:

(i) As close to the first customer as possible.

(ii) In a location representative of average residence time.

(iii) As close to the end of the distribution system as possible, reflecting maximum residence time in the distribution system.

(E) Chlorine dioxide monitoring may not be reduced.

(d) Monitoring requirements for disinfection byproduct precursors (DBPP) are as follows:

(1) Routine monitoring is required as follows:

(A) Subpart H systems which use conventional filtration treatment, as defined in 327 IAC 8-2-1, shall monitor each treatment plant for TOC no later than the point of combined filter effluent turbidity monitoring and representative of the treated water.

(B) All systems required to monitor under this subdivision shall also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water. These samples, source water and treated water, are referred to as paired samples.

(C) At the same time as the source water sample is taken, all systems shall monitor for alkalinity in the source water prior to any treatment. (D) Systems shall take one (1) paired sample and one (1) source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

(2) Subpart H systems with an average treated water TOC of less than two (2.0) milligrams per liter for two (2) consecutive years, or less than one (1.0) milligram per liter for one (1) year, may reduce monitoring for both TOC and alkalinity to one (1) paired sample and one (1) source water alkalinity sample per plant per quarter. The system shall revert to routine monitoring in the month following the quarter when the annual average treated water TOC is greater than or equal to two (2.0) milligrams per liter.

(e) Systems required to analyze for bromate may reduce bromate monitoring from monthly to once per quarter if the system demonstrates that the average source water bromide concentration is less than five hundredths (0.05) milligrams per liter based upon representative monthly measurements for one (1) year. The system shall continue bromide monitoring to remain on reduced bromate monitoring.

(f) Each system required to monitor under this section shall develop and implement a monitoring plan as follows:

(1) The system shall maintain the plan and make it available for inspection by the commissioner and the general public no later than thirty (30) days following the applicable compliance dates in 327 IAC 8-2.5-4(b).

(2) All Subpart H systems serving more than three thousand three hundred (3300) people shall submit a copy of the monitoring plan to the commissioner no later than the date of the first report required under 327 IAC 8-2.5-8.

(3) The commissioner may also require any other system to submit a monitoring plan.

(4) After review, the commissioner may require changes in any plan elements.

(5) The plan must include at a minimum the following elements:

(A) Specific locations and schedules for collecting samples for any parameters included in this section.

(B) How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

(C) If approved for monitoring as a consecutive system, or if

providing water to a consecutive system, the sampling plan must reflect the entire distribution system.

40 CFR 141.140 through 141.144 is incorporated by reference and is available for copying at the Indiana Department of Environmental Management, Office of Water Quality, 100 N Senate Avenue, Room 1255, Indianapolis, Indiana 46206.(Water Pollution Control Board; 327 IAC 8-2.5-6)*

327 IAC 8-2.5-7 Compliance requirements; disinfectants and disinfection byproducts

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 7 (a) General compliance requirements for disinfectants and disinfection byproducts are as follows:

(1) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

(2) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MRDLs for chlorine and chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

(3) All samples taken and analyzed under the provisions of this rule must be included in determining compliance, even if that number is greater than the minimum required.

(4) If, during the first year of monitoring under 327 IAC 8-2.5-6, any particular quarter's average will cause the running annual average of that system to exceed the MCL, the system is out of compliance at the end of that quarter.

(b) Compliance requirements for disinfection byproducts are as follows:

(1) Compliance requirements for TTHMs and HAA5 are as follows:

(A) For systems monitoring quarterly, compliance with MCLs in 327 IAC 8-2.5-1(b) will be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the system as prescribed by 327 IAC 8-2.5-6(b)(1).

(B) For systems monitoring less frequently than quarterly, systems demonstrate MCL compliance if the average of samples taken that year under the provisions of 327 IAC 8-2.5-6(b)(1) does not exceed the MCLs in 327 IAC 8-2.5-1. If the average of these samples exceeds the MCL, the system shall increase monitoring to once per quarter per treatment plant. Such a system is not in violation of the MCL until it has completed one (1) year of quarterly monitoring, unless the result of fewer than four (4) quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. Systems required to increase monitoring frequency to quarterly monitoring shall calculate compliance by including the sample which triggered the increased monitoring plus the following three (3) quarters of monitoring.

(C) If the running annual arithmetic average of quarterly averages covering any consecutive four (4) quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to 327 IAC 8-2.1-7, in addition to reporting to the commissioner pursuant to 327 IAC 8-2.5-8.

(D) If a public water system fails to complete four (4) consecutive quarters of monitoring, compliance with the MCL for the last four (4) quarter compliance period must be based on an average of the available data.

(2) Compliance requirements for bromate will be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one (1) sample, the average of all samples taken during the month) collected by the system as prescribed by 327 IAC 8-2.5-6(b)(3). If the average of samples covering any consecutive four (4) quarter period exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to 327 IAC 8-2.1-7, in addition to reporting to the agency pursuant to 327 IAC 8-2.5-8. If a public water system fails to complete twelve (12) consecutive months' monitoring, compliance with the MCL for the last four (4) quarter compliance period must be based on an average of the available data.

(3) Compliance requirements for chlorite will be based on an arithmetic average of each three (3) sample set taken in the distribution system as prescribed by 327 IAC 8-2.5-6(b)(2)(A)(ii) and 327 IAC 8-2.5-6(b)(2)(B). If the arithmetic average of any three (3) sample sets exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections three (3) through seventeen (17) of 327 IAC 8-2.1, in addition to reporting to the commissioner pursuant to 327 IAC 8-2.5-8.

(c) Compliance requirements for disinfectant residuals are as follows:

(1) Compliance requirements for chlorine and chloramines are as follows:

(A) Compliance will be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under 327 IAC 8-2.5-6(c)(1). If the average covering any consecutive four (4) quarter period exceeds the MRDL, the system is in violation of the MRDL and must notify the public pursuant to 327 IAC 8-2.1-7, in addition to reporting to the commissioner pursuant to 327 IAC 8-2.5-8.

(B) Where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including all monitoring results of both chlorine and chloramines in calculating compliance. Reports submitted pursuant to 327 IAC 8-2.5-8 must clearly indicate which residual disinfectant was analyzed for each sample.

(2) Compliance requirements for chlorine dioxide are as follows:

(A) Compliance requirements for acute violations are as follows:

(i) Compliance will be based on consecutive daily samples collected by the system under 327 IAC 8-2.5-6(c)(2).

(ii) If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (1) or more of the three (3) samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and must take immediate corrective action to lower the level of chlorine dioxide below the MRDL, and must notify the public pursuant to the procedures for acute health risks in sections three (3) through seventeen (17) of 327 IAC 8-2.1.

(iii) Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation and the system shall notify the public of the violation in accordance with the provisions for acute violations under sections three (3) through seventeen (17) of 327 IAC 8-2.1 in addition to reporting the commissioner pursuant to 327 IAC 8-2.5-8.

(B) Compliance requirements for nonacute violations are as follows:

(i) Compliance will be based on consecutive daily samples collected by the system under 327 IAC 8-2.5-6(c)(2).

(ii) If any two (2) consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and will notify the public pursuant to the procedures for nonacute health risks in sections three (3) through seventeen (17) of 327 IAC 8-2 in addition to reporting the commissioner pursuant to 327 IAC 8-2.5-8.

(iii) Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the system must notify the public of the violation in accordance with the provisions for nonacute violations under 327 IAC 8-2.1-7 in addition to reporting the commissioner pursuant to 327 IAC 8-2.5-8.

(d) Compliance for disinfection byproduct precursors (DBPP) are as follows:

(1) Compliance will be determined as specified by 327 IAC 8-2.5-9.

(2) Systems may begin monitoring to determine whether Step 1 TOC removals can be met twelve (12) months prior to the compliance date for the system. This monitoring is not required and failure to monitor during this period is not a violation. However, any system that does not monitor during this period, and then determines in the first twelve (12) months after the compliance date that it is not able to meet the Step 1 requirements in 327 IAC 8-2.5-9(b)(2) and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed by to 327 IAC 8-2.5-9(b)(3), and is in violation.

(3) Systems may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date.

(4) For systems required to meet Step 1 TOC removals, if the value calculated under 327 IAC 8-2.5-9(c)(1)(D) is less than one (1.00), the system is in violation of the treatment technique requirements and must notify the public pursuant to 327 IAC 8-2.1-17(80)(a) and (b), in addition to reporting to the commissioner pursuant to 327 IAC 8-2.5-8.

(Water Pollution Control Board 327 IAC 8-2.5-7)

327 IAC 8-2.5-8 Reporting and record keeping requirements; disinfectants and disinfection byproducts

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 8. (a) Systems required to sample quarterly or more frequently shall report to the commissioner within ten (10) days after the end of each quarter in which samples were collected, notwithstanding the provisions of 327 IAC 8-2.1-7. Systems required to sample less frequently than quarterly report to the commissioner within ten (10) days after the end of each monitoring period in which samples were collected.

(b) For disinfection byproducts, systems must report the information specified in the following table:

IF YOU ARE A:	YOU MUST REPORT:
(1) System monitoring for TTHMs and HAA5 under the requirements of 327 IAC 8-2.5-6(b) on a quarterly or more frequent basis.	(i) The number of samples taken during the last quarter. (ii) The location, date, and result of each sample taken during the last quarter. (iii) The arithmetic average of all samples taken in the last quarter. (iv) The annual arithmetic average of the quarterly arithmetic averages of this section for the last four (4) quarters. (v) Whether, based on 327 IAC 8-2.5-7(b)(1), the MCL was violated.
(2) System monitoring for TTHMs and HAA5 under the requirements of 327 IAC 8-2.5-6(b) less frequently than quarterly (but at least annually).	(i) The number of samples taken during the last year. (ii) The location, date, and result of each sample taken during the last monitoring period. (iii) The arithmetic average of all samples taken over the last year. (iv) Whether, based on 327 IAC 8-2.5-7(b)(1), the MCL was violated.
(3) System monitoring for TTHMs and HAA5 under the requirements of 327 IAC 8-2.5-6(b) less frequently than annually.	(i) The location, date, and result of the last sample taken. (ii) Whether, based on 327 IAC 8-2.5-7(b)(1), the MCL was violated.
(4) System monitoring for chlorite under the requirements of 327 IAC 8-2.5-6(b).	(i) The number of entry point samples taken each month for the last three (3) months. (ii) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter. (iii) For each month in the reporting period, the arithmetic average of all samples taken in each three sample set taken in the distribution system. (iv) Whether, based on 327 IAC 8-2.5-7(b)(3), the MCL was violated, and in which month, and how many times it was violated each month.
(5) System monitoring for bromate under the requirements of 327 IAC 8-2.5-6(b)	(i) The number of samples taken during the last quarter. (ii) The location, date, and result of each sample taken during the last quarter. (iii) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year. (iv) Whether, based on 327 IAC 8-2.5-7(b)(2), the MCL was violated.

(c) For disinfectants, systems shall report the information specified in the following table:

IF YOU ARE A:	YOU MUST REPORT:
(1) System monitoring for chlorine or chloramines under the requirements of 327 IAC 8-2.5-6(c)	(i) The number of samples taken during each month of the last quarter. (ii) The monthly arithmetic average of all samples taken in each month for the last twelve (12) months. (iii) The arithmetic average of all monthly averages for the last twelve (12) months. (iv) Whether, based on 327 IAC 8-2.5-7(c)(1), the MRDL was violated.
(2) System monitoring for chlorine dioxide under the requirements of 327 IAC 8-2.5-6(c)	(i) The dates, results, and locations of samples taken during the last quarter. (ii) Whether, based on 327 IAC 8-2.5-7(c)(2), the MRDL was violated. (iii) Whether the MRDL was exceeded in any two (2) consecutive daily samples and whether the resulting violation was acute or nonacute.

(d) For disinfection byproduct precursors and enhanced coagulation or enhanced_softening, systems shall report the information specified in the following table:

IF YOU ARE A:	YOU MUST REPORT:
(1) System monitoring monthly or quarterly for TOC under the requirements of 327 IAC 8-2.5-6(d) and required to meet the enhanced coagulation or enhanced softening requirements in 327 IAC 8-2.5-9(b)(2) or (3)	(i) The number of paired (source water and treated water) samples taken during the last quarter. (ii) The location, date, and results of each paired sample and associated alkalinity taken during the last quarter. (iii) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal. (iv) Calculations for determining compliance with the TOC percent removal requirements, as provided in 327 IAC 8-2.5-9(c)(1). (v) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in 327 IAC 8-2.5-9(b) for the last four (4) quarters.
(2) System monitoring monthly or quarterly for TOC under the requirements of 327 IAC 8-2.5-6(d) and meeting one (1) or more of the alternative compliance criteria in 327 IAC 8-2.5-9(a)(2) or (3)	(i) The alternative compliance criterion that the system is using. (ii) The number of paired samples taken during the last quarter. (iii) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (iv) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in 327 IAC 8-2.5-9(a)(2)(A) or (C) or of treated water TOC for systems meeting the criterion in 327 IAC 8-2.5-9(a)(2)(B). (v) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in 327 IAC 8-2.5-9(a)(2)(G) or of treated water SUVA for systems meeting the criterion in 327 IAC 8-2.5-9(a)(2)(H). (vi) The running annual average of source water alkalinity for systems meeting the criterion in 327 IAC 8-2.5-9(a)(2)(C) and of treated water alkalinity for systems meeting the criterion in 327 IAC 8-2.5-9(a)(3)(A). (vii) The running annual average for both TTHM and HAA5 for systems meeting the criterion in 327 IAC 8-2.5-9(a)(2)(C) or (F). (viii) The running annual average of the amount of magnesium hardness removal (as $CaCO_3$, in mg/L) for systems meeting the criterion in 327 IAC 8-2.5-9(a)(3)(B). (ix) Whether the system is in compliance with the particular alternative compliance criterion in 327 IAC 8-2.5-9(a)(2) or (3).

(Water Pollution Control Board; 327 IAC 8-2.5-8)

327 IAC 8-2.5-9 Treatment techniques for control of disinfection byproducts precursors

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 9. (a) Applicability is as follows:

(1) Subpart H systems using conventional filtration treatment shall operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in subsection (b) unless the system meets at least one (1) of the alternative compliance criteria listed in subdivision (2) or (3).

(2) Subpart H systems using conventional filtration treatment may use one (1) or all of the following alternative compliance criteria to comply with this section in lieu of complying with subsection (b):

(A) The system's source water TOC level, measured according to 327 IAC 8-2.5-5(d)(3), is less than two (2.0) milligrams per liter, calculated quarterly as a running annual average.

(B) The system's treated water TOC level, measured according to 327 IAC 8-2.5-5(d)(3), is less than two (2.0) milligrams per liter, calculated quarterly as a running annual average

(C) The system's source water TOC level, measured according to 327 IAC 8-2.5-5(d)(3) is less than four (4.0) milligrams per liter, calculated quarterly as a running annual average and the following are met;

(i) The source water alkalinity, measured according to 327 IAC 8-2.5-5(d)(1), is greater than sixty (60) milligrams per liter (as $CaCO_3$), calculated quarterly as a running annual average.

(ii) Either;

(AA) the TTHM and HAA5 running annual averages are no greater than forty thousandths (0.040) milligrams per liter and thirty thousandths (0.030) milligrams per liter, respectively; or

(BB) prior to the effective date for compliance in 327 IAC 8-2.5-4(b), the system has made a clear and irrevocable financial commitment not later than the effective date for compliance in 327 IAC 8-2.5-4(b) to use technologies that will limit the levels of TTHMs and HAA5 to no more than forty thousandths (0.040) milligrams per liter and thirty thousandths (0.030) milligrams per liter, respectively. Systems shall submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the agency

for approval not later than the effective date for compliance in 327 IAC 8-2.5-4(b). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a violation of National Primary Drinking Water Regulations.

(D) The TTHM and HAA5 running annual averages are no greater than forty thousandths (0.040) milligrams per liter and thirty thousandths (0.030) milligrams per liter, respectively, and the system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

(E) The system's source water SUVA, prior to any treatment and measured monthly according to 327 IAC 8-2.5-5(d)(4), is less than or equal to two (2.0) L/mg-m, calculated quarterly as a running annual average.

(F) The system's finished water SUVA, measured monthly according to 327 IAC 8-2.5-5(d)(4), is less than or equal to two (2.0) L/mg-m, calculated quarterly as a running annual average.

(3) Systems practicing enhanced softening that cannot achieve the TOC removals required by subdivision (b)(2) may use the following alternative compliance criteria in lieu of complying with subsection (b):

(A) Softening that results in lowering the treated water alkalinity to less than sixty (60) milligrams per liter (as $CaCO_3$), measured monthly according to 327 IAC 8-2.5-5(d)(1) and calculated quarterly as a running annual average.

(B) Softening that results in removing at least ten (10) milligrams per liter of magnesium hardness (as $CaCO_3$), measured monthly and calculated quarterly as an annual running average.

Systems shall comply with monitoring requirements in 327 IAC 8-2.5-6(d).

(b) Enhanced coagulation and enhanced softening performance requirements are as follows:

(1) Systems shall achieve the percent reduction of TOC specified in subdivision (2) between the source water and the combined filter effluent, unless the commissioner approves a system's request for alternate minimum TOC removal (Step 2) requirements under subdivision (3).

(2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with 327 IAC 8-2.5-6(d). Systems practicing softening are required to meet the Step 1 TOC reductions in the far-right column (Source water alkalinity greater than one hundred (120) milligrams per liter) for the specified source water TOC:

Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening for Subpart H Systems Using Conventional Treatment[1, 2]

Source-Water TOC, mg/L	Source-Water Alkalinity, mg/L as $CaCO_3$		
	0-60 (percent)	> 60-120 (percent)	> 120[3] (percent)
>2.0-4.0	35.0%	25.0%	15.0%
>4.0-8.0	45.0%	35.0%	25.0%
>8.0	50.0%	40.0%	30.0%

[1]Systems meeting at least one (1) of the conditions in subsection (a)(2)(A) through (a)(2)(F) of this section are not required to operate with enhanced coagulation.

[2] Softening systems meeting one of the alternative compliance criteria in subsection (a)(3) are not required to operate with enhanced softening.

[3]Systems practicing softening shall meet the TOC removal requirements in this column.

(3) Subpart H conventional treatment systems that cannot achieve the Step 1 TOC removals required by subdivision (2) due to water quality parameters or operational constraints shall apply to the commissioner, within three (3) months of failure to achieve the TOC removals required by subdivision (2) for approval of alternative minimum TOC (Step 2) removal requirements submitted by the system as provided by subdivision (4). If the commissioner approves the alternative minimum TOC removal (Step 2) requirements, the commissioner may make those requirements retroactive for the purposes of determining compliance. Until the commissioner approves the alternate minimum TOC removal (Step 2) requirements, the system shall meet the Step 1 TOC removals contained in subdivision (2).

(4) Alternate minimum TOC removal (Step 2) requirements are as follows:

(A) Applications made to the commissioner by enhanced coagulation systems for approval of alternate minimum TOC removal (Step 2) requirements under subdivision (3) must include, at a minimum, results of bench- or pilot-scale testing conducted under clause (C). The submitted bench- or pilot - scale testing will be used to determine the alternate enhanced coagulation level.

(B) For purposes of this subdivision, "alternate enhanced coagulation level" means coagulation at a coagulant dose and pH as determined by the method described in clauses (A) through (E) such that an incremental addition of ten (10) milligrams per liter of alum (or equivalent amount of ferric salt) results in a TOC removal of less than or equal to three tenths (0.3) milligrams per liter. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is defined as the minimum TOC removal required for the system. Once approved by the agency, this minimum requirement supersedes the minimum TOC removal required by the table in subdivision (2). This requirement will be effective until the agency approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve alternative minimum TOC removal levels is a violation of National Primary Drinking Water Regulations.

(C) Bench- or pilot-scale testing of enhanced coagulation must be conducted by using representative water samples and adding ten (10) milligrams per liter increments of alum, or equivalent amounts of ferric salt, until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

Enhanced Coagulation Step 2 Target pH

Alkalinity (mg/L as $CaCO_3$)	Target pH
0-60	5.5
>60-120	6.3
>120-240	7.0
>240	7.5

(D) For waters with alkalinities of less than sixty (60) milligrams per liter for which the addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below five and five tenths (5.5) before significant TOC removal occurs, the system shall add necessary chemicals to maintain the pH between five and three tenths (5.3) and five and seven tenths (5.7) in samples until the TOC removal of three tenths (0.3) milligrams per liter per ten (10) milligrams per liter alum added, or equivalent addition of iron coagulant, is reached.

(E) The system may operate at any coagulant dose or pH necessary, consistent with other NPDWRs, to achieve the minimum TOC percent removal approved under subdivision (3).

(F) If the TOC removal is consistently less than three tenths (0.3) milligrams per liter of TOC per ten (10) milligrams per liter of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The system may then apply to the commissioner for a waiver of enhanced coagulation requirements.

(c) Compliance calculations are required as follows:

(1) Subpart H systems other than those identified in subsections (a)(2) or (a)(3) shall comply with requirements contained in subsections (b)(2) or (b)(3). Systems shall calculate compliance quarterly, beginning after the system has collected twelve (12) months of data, by determining an annual average using the following method:

STEP 1: Calculate actual monthly TOC percent removal, which is equal to: (1 - (treated water TOC/source water TOC)) x one hundred (100).

STEP 2: Calculate the required monthly TOC percent removal (from either the table in subsection (b)(2) or from subsection (b)(3)).

STEP 3: Divide the value determined under STEP 1 by the value determined under STEP 2.

STEP 4: Add together the quotients determined under STEP 3 for the last twelve (12) months and divide by twelve (12).

STEP 5: If the quotient calculated in STEP 4 is less than one (1.00), the system is not in compliance with the TOC percent removal requirements.

(2) Systems may use the following provisions in lieu of the calculations in subdivision (1) to determine compliance with TOC percent removal requirements:

(A) In any month that the system's treated or source water TOC level, measured according to 327 IAC 8-2.5-5(d)(3), is less than two (2.0) milligrams per liter, the system may assign a monthly value of one (1.0) (in lieu of the value calculated in STEP 3 of subdivision (1)) when calculating compliance under subdivision (1).

(B) In any month that a system practicing softening removes at least ten (10) milligrams per liter of magnesium hardness (as $CaCO_3$), the system may assign a monthly value of one (1.0) (in lieu of the value calculated in STEP 3 of subdivision (1)) when calculating compliance under subdivision (1).

(C) In any month that the system's source water SUVA, prior to any treatment and measured according to 327 IAC 8-2.5-5(d)(4), is less than or equal to two (2.0) L/mg-m, the system may assign a monthly value of one (1.0) (in lieu of the value calculated in STEP 3 of subdivision (1)) when calculating compliance under subdivision (1).

(D) In any month that the system's finished water SUVA, measured according to 327 IAC 8-2.5-5(d)(4), is less than or equal to two (2.0) L/mg-m, the system may assign a monthly value of one (1.0) (in lieu of the value calculated in STEP 3 of subdivision (1)) when calculating compliance under subdivision (1).

(E) In any month that a system practicing enhanced softening lowers alkalinity below sixty (60) milligrams per liter (as $CaCO_3$), the system may assign a monthly value of one (1.0) (in lieu of the value calculated in STEP 3 of subdivision (1)) when calculating compliance under subdivision (1).

(3) Subpart H systems using conventional treatment may also comply with the requirements of this section by meeting the criteria in subsections (a)(2) or (a)(3).

(d) The commissioner identifies the following as treatment techniques for Subpart H systems to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems:

(1) Conventional treatment.

(2) Enhanced coagulation.

(3) Enhanced softening.

(Water Pollution Control Board; 327 IAC 8-2.5-9)

SECTION 14. 327 IAC 8-2.6 IS ADDED TO READ AS FOLLOWS:

Rule 2.6. Enhanced Filtration and Disinfection

27 IAC 8-2.6-1 General requirements; enhanced filtration and disinfection

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 1. (a) Upon the effective date of this rule, unless otherwise specified in this section, all subpart H systems serving a population of at least ten thousand (10,000) individuals shall establish treatment technique requirements in lieu of maximum contaminant levels for the following contaminants:

(1) Giardia Lamblia viruses.

(2) Heterotrophic plate count bacteria.

(3) Legionella.

(4) Cryptosporidium.

(5) Turbidity.

The systems shall also provide treatment of their source water that complies with these treatment technique requirements in addition to those identified in 327 IAC 8-2-8.5.

(b) The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least ninety-nine percent (99%) (2-log) removal of Cryptosporidium between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or Cryptosporidium control under the water shed control plan for unfiltered systems.

(2) Compliance with the profiling and benchmark requirements under the provisions of 327 IAC 8-2.6-2.

(c) A public water system subject to the requirements of this section is considered to be in compliance with the requirements of subsection (a) and (b) if:

(1) it meets the disinfection requirements in 327 IAC 8-2-8.6 and 327 IAC 8-2.6-2; or

(2) it meets the applicable filtration requirements in either 327 IAC 8-2-8.5 or 327 IAC 8-2.6-3 and the disinfection requirements in 327 IAC 8-2-8.6 and 327 IAC 8-2.6-2.

(d) Subpart H systems serving a population of greater than then thousand (10,000) are not permitted to begin construction of uncovered finished water storage facilities after the effective date of this rule. *(Water Pollution Control Board; 327 IAC 8-2.6-1)*

327 IAC 8-2.6-2 Disinfection profiling and benchmarking
Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 2. (a) A public water system subject to the requirements of this section shall determine its TTHM annual average using the procedure in subdivision (1) and its HAA5 annual average using the procedure in subdivision (2). The annual average is the arithmetic average of the quarterly averages of four (4) consecutive quarters of monitoring.

(1) The TTHM annual average must be the annual average during the same period as is used for the HAA5 annual average.

(A) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that collected data under the provisions of 40 CFR §141* must use the results of the samples collected during the last four (4) quarters of required monitoring under 40 CFR §141.142*.

(B) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that use "grandfathered" HAA5 occurrence data that meet the provisions of clause (2)(B) must use the TTHM data collected at the same time under the provisions of 327 IAC 8-2-5(a) and 327 IAC 8-2-5.3.

(C) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that use HAA5 occurrence data that meet the provisions of clause (2)(C)(i) must use the TTHM data collected at the same time under the provisions of 327 IAC 8-2-5(a) and 327 IAC 8-2-5.3.

(2) The HAA5 annual average must be the annual average during the same period as is used for the TTHM annual average.

(A) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that collected data under the provisions of 40 CFR §141* must use the results of the samples collected during the last four (4) quarters of required monitoring under 40 CFR §141.142*.

(B) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that have collected four (4) quarters of HAA5 occurrence data that meets the routine monitoring sample number and location requirements for TTHM in 327 IAC 8-2-5(a) and 327 IAC 8-2-5.3 and handling and analytical method requirements of 40 CFR §141.142(b)(1)* may use those data to determine whether the requirements of this section apply.

(C) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that have not collected four (4) quarters of HAA5 occurrence data that meets the provisions of either clause (A) or (B) by March 16, 1999 must either:

(i) Conduct monitoring for HAA5 that meets the routine monitoring sample number and location requirements for TTHM in 327 IAC 8-2-5(a), 327 IAC 8-2-5.3, and handling and analytical method requirements of 40 CFR §141.142(b)(1)* to determine the HAA5 annual average and whether the requirements of subsection (b) apply. This monitoring must be completed so that the applicability determination can be made no later than March 31, 2000 or

(ii) Comply with all other provisions of this section as if the HAA5 monitoring had been conducted and the results required compliance with subsection (b).

(3) Subpart H systems serving a population of greater than ten thousand (10,000) individuals may request that the Commissioner approve a more representative annual data set than the data set determined under subdivision (1) or (2) for the purpose of determining applicability of the requirements of this section.

(4) The Commissioner may require that a system use a more representative annual data set than the data set determined under subdivision (1) or (2) of this section for the purpose of determining applicability of the requirements of this section.

(5) Subpart H systems serving a population of greater than ten thousand (10,000) individuals shall submit data to the Commissioner based on the following schedules:

(A) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that collected TTHM and HAA5 data under the provisions of 40 CFR §141*, as required by subdivision (1)(A) and (2)(A), shall submit the results of the samples collected during the last twelve (12) months of monitoring required under 40 CFR §141.142* not later than December 31, 1999.

(B) Those subpart H systems serving a population of greater than ten thousand (10,000) individuals that have collected four (4) consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in 327 IAC 8-2-5(a), 327 IAC 8-2-5.3, and handling and analytical method requirements of 40 CFR §141.142(b)(1)*, as allowed by clauses (1)(B) and (2)(B), must submit those data to the commissioner not later than April 15, 1999. Until the Commissioner has approved the data, the system shall conduct monitoring for HAA5 using the monitoring requirements specified under clause (2)(C).

(C) Subpart H systems serving a population of greater than ten thousand (10,000) individuals that conduct monitoring for HAA5 using the monitoring requirements specified by clause (2)(C) and item (2)(C)(i), shall submit TTHM and HAA5 data not later than March 31, 2000.

(D) Those systems that elect to comply with all other provisions of this section as if the HAA5 monitoring had been conducted and the results required compliance with this section, as allowed under item (2)(C)(ii), shall notify the Commissioner in writing of their election not later than December 31, 1999.

(E) If the system elects to represent that the Commissioner approve a more representative annual data set than the data set determined under clause (2)(A) of this section, the system must submit this request in writing not later than December 31, 1999.

(6) Any subpart H systems serving a population of greater than ten thousand (10,000) individuals having either a TTHM annual average greater than or equal to sixty-four thousandths (0.064) milligrams per liter or an HAA5 annual average greater than or equal to forty-eight thousandths (0.048) milligrams per liter during the period identified in subdivisions (1) and (2) shall comply with subsection (b).

(b) Disinfection profiling requirements are as follows:

(1) Any subpart H system serving a population of greater than

ten thousand (10,000) individuals that meets the criteria in subsection (a)(6) shall develop a disinfection profile of its disinfection practice for a period of up to three (3) years.

(2) Not later than April 1, 2000, subpart H systems serving a population of greater than ten thousand (10,000) individuals shall monitor daily for a period of twelve (12) consecutive calendar months to determine the total logs of inactivation for each day of operation based on the CT99.9 values in Tables1.1 through 1.6, 2.1, and 3.1 of 40 CFR 141.74(b)*, as appropriate, through the entire treatment plant. At a minimum, subpart H systems serving a population of greater than ten thousand (10,000) individuals with a single or multiple point of disinfectant application prior to entrance to the distribution system shall conduct the monitoring in clauses (A) through (D) for each disinfection segment. The system shall monitor the parameters necessary to determine the total inactiavation ratio using analytical methods in 327 IAC 8-2-8.7 as follows:

(A) The temperature of the disinfection water shall be measured once per day at each residual disinfectant concentration sampling point during peak hourly flow.

(B) If the system uses chlorine, the pH of the disinfected water shall be measured once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.

(C) The disinfectant contact time ("T") shall be determined for each day during peak hourly flow.

(D) The residual disinfectant concentration ("C") of the water before or at the first customer and prior to each additional point of disinfection, shall be measured each day during peak hourly flow.

(3) In lieu of the monitoring conducted under the provisions of subdivision (2) to develop the disinfection profile, subpart H systems serving a population of greater than ten thousand (10,000) individuals may elect to meet either of the following requirements:

(A) Not later than March 31, 2000, subpart H systems serving a population of greater than ten thousand (10,000) individuals that has three (3) years of existing operational data may submit those data, a profile generated using those data, and a request that the Commissioner approve use of those data in lieu of monitoring under subdivision (2). The Commissioner shall determine whether these operational data are substantially equivalent to data collected under subdivision (2) and whether these data are representative of Giardia Lamblia inactivation through the entire treatment plant and not just of certain treatment segments. Until the Commissioner approves this request, the system is required to conduct monitoring under subdivision (2).

(B) In addition to the disinfection profile generated under subdivision (2), subpart H systems serving a population of greater than ten thousand (10,000) individuals that has existing operational data may use those data to develop a disinfection profile for additional years. Subpart H systems serving a population of greater than ten thousand (10,000) may use these additional yearly disinfection profiles to develop a benchmark under subsection (c). The Commissioner shall determine whether these operational data are substantially equivalent to data collected under subdivision (2). These data must also be representative of inactivation through the entire treatment plant and not just of certain treatment segments.

(4) Subpart H systems serving a population of greater than ten thousand (10,000) individuals shall calculate the total inactivation ratio as follows:

(A) If the system uses only one (1) point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment by using either of the following methods:

(i) Determine one (1) inactivation ratio ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow.

(ii) Determine successive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the system must calculate the total inactivation ratio by determining ($CTcalc/CT_{99.9}$) for each sequence and then adding the ($CTcalc/CT_{99.9}$) values together to determine (Σ ($CTcalc/CT_{99.9}$)).

(B) Subpart H systems serving a population of greater than ten thousand (10,000) individuals that use more than one (1) point of disinfectant application before the first customer shall determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The ($CTcalc/CT_{99.9}$) value of each segment and (Σ ($CTcalc/CT_{99.9}$)) shall be calculated using the method in clause (A).

(C) Subpart H systems serving a population of greater than ten thousand (10,000) individuals shall determine the total logs of inactivation by multiplying the value calculated in clause (A) or (B) of this section by three (3.0).

(5) Subpart H systems serving a population of greater than ten thousand (10,000) individuals that use either chloramines or ozone for primary disinfection shall also calculate the logs of inactivation for viruses using a method approved by the Commissioner.

(6) Subpart H systems serving a population of greater than ten thousand (10,000) individuals shall retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the Commissioner for review as part of sanitary surveys conducted by the Commissioner.

(c) Disinfection Benchmarking requirements are as follows:

(1) A Subpart H system serving a population of greater than ten thousand (10,000) individuals required to develop a disinfection profile under subsections (a) and (b) that decides to make a significant change to its disinfection practice shall consult with the Commissioner prior to making such change. For purposes of this subdivision, significant changes means the following:

(A) Changes to the point of disinfection.

(B) Changes to the disinfectant(s) used in the treatment plant.

(C) Changes to the disinfection process.

(D) Any other modification identified by the Commissioner.

(2) A subpart H system serving a population of greater than ten thousand (10,000) individuals that is modifying its disinfection practice shall calculate its disinfection benchmark using the following procedures:

(A) Subpart H systems serving a population of greater than ten thousand (10,000) individuals shall determine the lowest average monthly Giardia lamblia inactivation for each year of profiling data collected and calculated under subsection (b). The system shall determine the average Giardia lamblia inactivation for each calendar month for each year of profiling data by dividing the sum of daily Giardia lamblia inactivation by the number of values calculated for that month.

(B) The disinfection benchmark is the lowest monthly average value (for subpart H systems serving a population of greater

than ten thousand (10,000) with one (1) year of profiling data) or average of lowest monthly average values (for subpart H systems serving a population of greater than ten thousand (10,000) individuals with more than one (1) year of profiling data) of the monthly logs of Giardia lamblia inactivation for each year of profiling data.

(C) Subpart H systems serving a population of greater than ten thousand (10,000) individuals that use either chloramines or ozone for primary disinfection shall also calculate the disinfection benchmark for viruses using a method approved by the Commissioner.

(D) The system shall submit the following information to the Commissioner as part of its consultation process:

(i) A description of the proposed change in disinfection practice.

(ii) The disinfection profile for Giardia lamblia (and, if necessary, viruses) under subsection (b) and benchmark as required by this subsection.

(iii) An analysis of how the proposed change will affect the current levels of disinfection.

*40 CFR §141, §141.142, §141.142(b)(1), and §141.74(b) are incorporated by reference and are available for copying at the Indiana Department of Environmental Management, Office of Water Quality, 100 North Senate Avenue, Room 1255, Indianapolis, Indiana 46206 *(Water Pollution Control Board; 327 IAC 8-2.6-2)*

327 IAC 8-2.6-3 Enhanced filtration

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 3. By December 31, 2001, subpart H systems serving a population of greater than ten thousand (10,000) individuals shall provide treatment consisting of both disinfection, as specified in 327 IAC 8-2-8.6, and filtration treatment which complies with this section.

(1) Requirements for systems using conventional filtration or direct filtration are as follows:

(A) For Subpart H systems serving a population of greater than ten thousand (10,000) individuals using conventional filtration or direct filtration, the turbidity level of representative samples of the system's filtered water must be less than or equal to three tenths (0.3) nephelometric turbidity units in at least ninety-five percent (95%) of the measurements taken each month, measured as specified in327 IAC 8-2-8.7 and 327 IAC 8-2-8.8.

(B) The turbidity level of representative samples of the system's filtered water must at no time exceed one (1) nephelometric turbidity units, measured as specified in 327 IAC 8-2-8.7 and 327 IAC 8-2-8.8.

(C) A system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the Commissioner.

(2) A Subpart H system serving a population greater than ten thousand (10,000) may use filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration if it demonstrates to the Commissioner, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of 327 IAC 8-2-5-8.6, consistently achieves ninety-nine and nine tenths percent (99.9%) removal or inactivation of Giardia lamblia cysts and ninety-nine and ninety-nine hundredths percent (99.99%) removal or inactivation of viruses, and ninety-nine percent (99%) removal of Cryptosporidium oocysts, and the Commissioner approves the use of the filtration technology.

(3) For each approval under subdivision (2), the Commissioner will set turbidity performance requirements that the system must meet at least ninety-five percent (95%) of the time and that the system may not exceed at any time at a level that consistently achieves ninety-nine and nine tenths percent (99.9%) removal or inactivation of Giardia lamblia cysts, ninety-nine and ninety-nine hundredths percent (99.99%) removal or inactivation of viruses, and ninety-nine percent (99%) removal of Cryptosporidium oocysts.

(Water Pollution Control Board; 327 IAC 8-2.6-3)

327 IAC 8-2.6-4 Filtration sampling requirements

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 4. (a) In addition to monitoring required by 327 IAC 8-2-8.7, a Subpart H system serving a population of greater than ten thousand (10,000) individuals subject to the requirements of this section that provides conventional filtration treatment or direct filtration shall comply with the following:

(1) Conduct continuous monitoring of turbidity for each individual filter using an approved method in 327 IAC 8-2-8.7.

(2) Calibrate turbidimeters using the procedure specified by the manufacturer.

(3) Record the results of individual filter monitoring every fifteen (15) minutes.

(b) If there is a failure in the continuous turbidity monitoring equipment, Subpart H systems serving a population of greater than ten thousand (10,000) individuals must conduct grab sampling every four (4) hours in lieu of continuous monitoring, but for no more than five (5) working days following the failure of the equipment. *(Water Pollution Control Board; 327 IAC 8-2.6-4)*

327 IAC 8-2.6-5 Enhanced filtration and disinfection reporting and record keeping

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 5. Beginning January 1, 2002, a Subpart H system serving a population of greater than ten thousand (10,000) individuals that is subject to the requirements of 327 IAC 8-2.6-3(b) and provides conventional filtration treatment or direct filtration shall meet the following requirements in addition to the reporting and record keeping requirements in 327 IAC 8-2-14:

(1) Turbidity measurements as required by 327 IAC 8-2.6-3 shall be reported within ten (10) days after the end of each month the system serves water to the public. Information that shall be reported includes:

(A) The total number of filtered water turbidity measurements taken during the month.

(B) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in 327 IAC 8-2.6-3(a) or (b).

(C) The date and value of any turbidity measurements taken during the month which exceed one (1) nephelometric turbidity unit for systems using conventional filtration treatment or direct filtration, or which exceed the maximum level set by the commissioner under 327 IAC 8-2.6-3. This reporting requirement is in lieu of the reporting specified in 327 IAC 8-2-14(b).

(2) Subpart H systems serving a population of greater than ten thousand (10,000) individuals shall maintain the results of individual filter monitoring taken under 327 IAC 8-2.6-4 for at least three (3) years. These systems shall report that they have

conducted individual filter turbidity monitoring under 327 IAC 8-2.6-3 within ten (10) days after the end of each month they serve water to the public if measurements demonstrate one (1) or more of the following conditions:

(A) For any individual filter that has a measured turbidity level of greater than one (1) nephelometric turbidity unit in two (2) consecutive measurements taken fifteen (15) minutes apart, subpart H systems serving a population of greater than ten thousand (10,000) individuals shall report the filter number, the turbidity measurement, and the date on which the exceedance occurred. In addition, the system shall either produce a filter profile for the filter within seven (7) days of the exceedance, if the system is not able to identify an obvious reason for the abnormal filter performance, and report that the profile has been produced or report the obvious reason for the exceedance.

(B) For any individual filter that has a measured turbidity level of greater than five tenths (0.5) in two (2) consecutive measurements taken fifteen (15) minutes apart at the end of the first four (4) hours of continuous filter operation after the filter has been backwashed or otherwise taken offline,subpart H systems serving a population of greater than ten thousand (10,000) individuals shall report the filter number, the turbidity, and the date on which the exceedance occurred. In addition, the system shall either produce a filter profile for the filter within seven (7) days of the exceedance, if the system is not able to identify an obvious reason for the abnormal filter performance, and report that the profile has been produced or report the obvious reason for the exceedance.

(C) For any individual filter that has a measured turbidity level of greater than one (1) nephelometric turbidity unit in two (2) consecutive measurements taken fifteen (15) minutes apart at any time in each of three (3) consecutive months, subpart H systems serving a population of greater than ten thousand (10,000) shall report the filter number, the turbidity measurement, and the date on which the exceedance occurred. In addition, the system shall conduct a self-assessment of the filter within fourteen (14) days of the exceedance and report that the self-assessment was conducted. The self-assessment shall consist of at least the following components:

(i) Assessment of filter performance.

(ii) Development of a filter profile.

(iii) Identification and prioritization of factors limiting filter performance.

(iv) Assessment of the applicability of corrections.

(v) Preparation of a filter self-assessment report.

(D) For any individual filter that has a measured turbidity level of greater than two (2) nephelometric turbidity units in two (2) consecutive measurements taken fifteen (15) minutes apart at any time in each of two (2) consecutive months, subpart H systems serving a population of greater than ten thousand (10,000) individuals shall report the filter number, the turbidity measurement, and the date on which the exceedance occurred. In addition, the system shall arrange for the conduct of a comprehensive performance evaluation by the commissioner or a third party approved by the commissioner no later than thirty (30) days following the exceedance and have the evaluation completed and submitted to the commissioner no later than ninety (90) days following the exceedance.

(3) Additional reporting requirements are as follows:

(A) If at any time the turbidity exceeds one (1) nephelometric turbidity unit in representative samples of filtered water in a subpart H system serving a population of greater than ten thousand (10,000) individuals using conventional filtration treatment or direct filtration, the system shall inform the commissioner as soon as possible, but no later than the end of the next business day.

(B) If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the commissioner under 327 IAC 8-2.6-9 for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, subpart H systems serving a population of greater than ten thousand (10,000) individuals shall inform the commissioner as soon as possible, but no later than the end of the next business day.

Systems that use lime softening may apply to the commissioner for alternative exceedance levels for the levels specified in subdivisions (2) and (3) if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance. *(Water Pollution Control Board; 327 IAC 8-2.6-5)*

327 IAC 8-2.6-6 Filter backwash

Authority: IC 13-13-5-1; IC 13-14-8-2; IC 13-14-8-7; IC 13-18-3-2
Affected: IC 13-12-3-1; IC 13-13-5-2; IC 13-14-9; IC 13-18-11

Sec. 6. All subpart H systems that employ conventional filtration or direct filtration treatment and recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall meet the following requirements:

(1) A system shall notify the commissioner in writing by December 8, 2003 if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification shall include, at a minimum, the following information:

(A) A plant schematic showing:

(i) the origin of all flows which are recycled, including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes;

(ii) the hydraulic conveyance used to transport them; and

(iii) the location where they are re-introduced back into the treatment plant.

(B) Typical recycle flow in gallons per minute (gpm).

(C) The highest observed plant flow experienced in the previous year in gallons per minute (gpm).

(D) Design flow for the treatment plant in gallons per minute (gpm).

(E) Commissioner-approved operating capacity for the plant where the commissioner has made such determinations.

(2) Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes shall return these flows through the processes of a system's existing conventional or direct filtration system as defined in 327 IAC 8-2-1(14) and (18), or at an alternate location approved by the commissioner by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements shall be completed no later than June 8, 2006.

(3) Subpart H systems shall collect and retain on file the following recycle flow information on forms provided by the department for review and evaluation by the commissioner beginning June 8, 2004:

(A) Copy of the recycle notification and information submitted to the commissioner under subdivision (1).

(B) List of all recycle flows and the frequency with which they are returned.

(C) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(D) Typical filter run length and a written summary of how filter run length is determined.

(E) The type of treatment provided for the recycle flow.

(F) Data on the physical dimensions of the equalization and treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

(Water Pollution Control Board; 327 IAC 8-2.6-6)

SECTION 15. THE FOLLOWING ARE REPEALED: 327 IAC 8-2-6; 327 IAC 8-2-6.1.

Notice of First Meeting/Hearing

Under IC 4-22-2-24, IC 13-14-8-6, and IC 13-14-9, notice is hereby given that on July 10, 2002 at 1:30 p.m.,at the Indiana Government Center-South, 402 West Washington Street, Conference Center Room C, the Indiana Water Pollution Control Board will hold a public hearing on amendments to the drinking water standards rules under 327 IAC 8-2 and 327 IAC 8-2.1 and new rules 327 IAC 8-2.5 and 327 IAC 8-2.6 specifically concerning interim enhanced surface water treatment, disinfectants/disinfection byproducts, and filter backwash.

The purpose of this hearing is to receive comments from the public prior to preliminary adoption of these rules by the board. All interested persons are invited and will be given reasonable opportunity to express their views concerning the proposed amendments. Oral statements will be heard, but for the accuracy of the record, all comments should be submitted in writing.

Technical information regarding this action may be obtained from Lilia Park, Compliance Section, Drinking Water Branch, Office of Water Quality, (317) 308-3297 or (800) 451-6027 (in Indiana). Additional information regarding this action may be obtained from Megan Wallace, Rules Section, Office of Water Quality, (317) 233-8669 or (800) 451-6027 (in Indiana).

Individuals requiring reasonable accommodations for participation in this event should contact the Indiana Department of Environmental Management, Americans with Disabilities Act coordinator at:

ADA Coordinator
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

or call (317) 233-0855. TDD: (317) 232-6565. Speech and hearing impaired callers may contact the agency via the Indiana Relay Service at 1-800-743-3333. Please provide a minimum of 72 hours' notification.

Copies of these rules are now on file at the Office of Water Quality, Indiana Department of Environmental Management, Indiana Government Center-North, 100 North Senate Avenue, Twelfth Floor, Indianapolis, Indiana and Legislative Services Agency, One North Capitol, Suite 325, Indianapolis, Indiana and are open for public inspection.

Tim Method
Acting Assistant Commissioner
Office of Water Quality
Indiana Department of Environmental Management

TITLE 329 SOLID WASTE MANAGEMENT BOARD

SECOND NOTICE OF COMMENT PERIOD
LSA Document #01-161

DIGEST

DEVELOPMENT OF AMENDMENTS TO RULES CONCERNING UNDERGROUND STORAGE TANKS

PURPOSE OF NOTICE

The Indiana Department of Environmental Management (IDEM) has developed draft rule language for amendments to rules at 329 IAC 9 concerning underground storage tanks. By this notice, IDEM is soliciting public comment on the draft rule language. This rule clarifies language and requirements. Several new definitions were added. The definitions at 329 IAC 9-1-10.1, 329 IAC 9-1-10.2, 329 IAC 9-1-14.1, and 329 IAC 9-1-41.1 were repealed and renumbered to alphabetize additional definitions that were added. This rule has also added appropriate changes to make the rule consistent with IC 13-12-3-2 that allows remediation programs to use either standard default options or a risk assessment (risk-based) approach for determining methods for cleanups and closure standards. This rule reorganizes and clarifies Rule 6, the closure of UST systems and deletes "modified closure". This rule also relocates several sections to be consistent with the federal regulations and appropriate procedure. IDEM seeks comment on the affected citations listed and any other provisions of Title 329 that may be affected by this rulemaking.

HISTORY

First Notice of Comment Period: June 1, 2001, Indiana Register (24 IR 2917).

CITATIONS AFFECTED: 329 IAC 9-1-1; 329 IAC 9-1-4; 329 IAC 9-1-10.1; 329 IAC 9-1-10.2; 329 IAC 9-1-10.4; 329 IAC 9-1-10.6; 329 IAC 9-1-10.8; 329 IAC 9-1-14; 329 IAC 9-1-14.1; 329 IAC 9-1-14.3; 329 IAC 9-1-14.5; 329 IAC 9-1-14.7; 329 IAC 9-1-25; 329 IAC 9-1-27; 329 IAC 9-1-29.1; 329 IAC 9-1-36; 329 IAC 9-1-39.5; 329 IAC 9-1-41; 329 IAC 9-1-41.1; 329 IAC 9-1-41.3; 329 IAC 9-1-41.5; 329 IAC 9-1-42.1; 329 IAC 9-1-47; 329 IAC 9-1-47.1; 329 IAC 9-2-1; 329 IAC 9-2-2; 329 IAC 9-2.1-1; 329 IAC 9-3-1; 329 IAC 9-3-2; 329 IAC 9-3.1-1; 329 IAC 9-3.1-2; 329 IAC 9-3.1-3; 329 IAC 9-3.1-4; 329 IAC 9-4-3; 329 IAC 9-4-4; 329 IAC 9-5-1; 329 IAC 9-5-2; 329 IAC 9-5-3.1; 329 IAC 9-5-3.2; 329 IAC 9-5-4.1; 329 IAC 9-5-4.2; 329 IAC 9-5-5.1; 329 IAC 9-5-6; 329 IAC 9-5-7; 329 IAC 9-6-1; 329 IAC 9-6-2; 329 IAC 9-6-2.5; 329 IAC 9-6-3; 329 IAC 9-6-4; 329 IAC 9-6-5; 329 IAC 9-7-1; 329 IAC 9-7-2; 329 IAC 9-7-3; 329 IAC 9-7-4; 329 IAC 9-7-6.

AUTHORITY: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2.

SUBJECT MATTER AND BASIC PURPOSE OF RULEMAKING

The purpose of the rulemaking is to update the underground storage tank requirements for clarity and consistency. The most current edition of 329 IAC 9 became effective August 1999. Changes were made at that time so the Indiana rules were consistent with Federal requirements. Many of the Indiana Underground Storage Tank Guidance Manual requirements were put into the rule. The rule has been implemented for more than two years. As staff have implemented this rule, they found some instances of confusion and inconsistency with the requirements. This rule will amend those parts and also add references to the standards for risk assessments (risk-based approach

to closure). The UST closure section is also being scrutinized. "Modified closure" and the accompanying requirements are being deleted. Incorporations by reference documents are being updated as appropriate.

SUMMARY/RESPONSE TO COMMENTS FROM THE FIRST COMMENT PERIOD

IDEM requested public comment from June 1, 2001, through July 1, 2001, on alternative ways to achieve the purpose of the rule and suggestions for the development of draft rule language. IDEM received no comments in response to the first notice of public comment period.

REQUEST FOR PUBLIC COMMENTS

This notice requests the submission of comments on the draft rule language, including suggestions for specific revisions to language to be contained in the draft rule. Mailed comments should be addressed to:

#01-161(SWMB)[UST Change Rule]
Marjorie Samuel
Rules, Outreach and Planning Section
Office of Land Quality
Indiana Department of Environmental Management
P.O. Box 6015
Indianapolis, Indiana 46206-6015.

Hand delivered comments will be accepted by the receptionist on duty at the eleventh floor reception desk, Office of Land Quality, 100 North Senate Avenue, Indianapolis, Indiana.

Comments may be submitted by facsimile at the IDEM fax number: (317) 232-3403, Monday through Friday, between 8:15 a.m. and 4:45 p.m. Please confirm the timely receipt of faxed comments by calling the Office of Land Quality's Rules, Outreach and Planning Section at (317) 232-7995.

COMMENT PERIOD DEADLINE

Comments must be postmarked, faxed, or hand delivered by July 1, 2002.

Additional information regarding this action may be obtained from Lynn West, Rules, Outreach and Planning Section, Office of Land Quality, (317) 232-3593 or (800) 451-6027 (in Indiana).

DRAFT RULE

SECTION 1. 329 IAC 9-1-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-1 Applicability

Authority: IC 13-12-3-2; IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 1. (a) The requirements of this article apply to all owners and operators of ~~a~~ **an** UST system as defined in section 49 of this rule, except as otherwise provided in subsections (b), (c), and (d). Any UST system listed in subsection (c) shall meet the requirements of section 1.1 of this rule. Nothing in this article shall be construed to conflict with, circumvent, rescind, or repeal any authority, power, or duty possessed by the office of the state fire marshal under Indiana law.

(b) The following UST systems are excluded from the requirements of this article:

(1) Any UST system holding:

(A) hazardous wastes regulated under Subtitle C (42 U.S.C. 6921 through 42 U.S.C. 6939b) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996; or

(B) a mixture of such hazardous waste and other regulated substances.

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 (33 U.S.C. 1342) or 307(b) (33 U.S.C. 1317(b)) of the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., in effect on October 31, 1994.

(3) Equipment or machinery that contains regulated substances for operational purposes and that may include any of the following:

(A) Hydraulic lift tanks.

(B) Electrical equipment tanks.

(4) Any UST system whose capacity is one hundred ten (110) gallons or less, except an owner and operator with two (2) or more UST systems on-site whose individual capacities are one hundred ten (110) gallons or less are not excluded if the total capacity of all tanks on-site containing the same product exceeds one hundred ten (110) gallons.

(5) Any UST system that contains a de minimis concentration of regulated substances.

(6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) 329 IAC 9-2 through 329 IAC 9-4, 329 IAC 9-6, and 329 IAC 9-7 do not apply to any of the following types of UST systems:

(1) Wastewater treatment tank systems.

(2) Any UST system containing radioactive material that is regulated under the Atomic Energy Act of 1954, 42 U.S.C. 2011, et seq., as amended, in effect on April 26, 1996.

(3) Any UST system that is part of an emergency generator system at a nuclear power generation facility regulated by the Nuclear Regulatory Commission under 10 CFR 50, Appendix A.

(4) Airport hydrant fuel distribution systems.

(5) UST systems with field-constructed tanks.

(d) 329 IAC 9-7 does not apply to any UST system that stores fuel solely for use by emergency power generators.

(e) Unless specified in the incorporated by reference documents incorporated in this article, the version of documents referenced in the incorporated by reference documents is the latest version that is in effect on the date of **the most recent** final adoption of the incorporated by reference documents into **a section of** this article.

(f) Notwithstanding any remediation taking place under a corrective action plan in 329 IAC 9-5-7 approved before the most recent effective date of this section, this article supercedes the agency's clean-up guidelines set forth in the Underground Storage Tank Branch Guidance Manual and fully incorporates the Risk Integrated System of Closure Standards as required under IC 13-12-3-2. *(Solid Waste Management Board; 329 IAC 9-1-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1062; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3683; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 2. 329 IAC 9-1-4 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-4 "Agency" defined

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 4. "Agency" means the department of environmental management. ~~underground storage tank branch.~~ This definition is not applicable under 329 IAC 9-8. *(Solid Waste Management Board; 329 IAC 9-1-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1063; filed Jul 19, 1999,*

12:00 p.m.: 22 IR 3685; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 3. 329 IAC 9-1-10.4 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-10.4 "Change-in-service" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 10.4. "Change-in-service" means continued use of the UST or UST system to store a nonregulated substance. *(Solid Waste Management Board; 329 IAC 9-1-10.4)*

SECTION 4. 329 IAC 9-1-10.6 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-10.6 "Chemical of concern" or "COC" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 10.6. "Chemical of concern" or "COC" means the parameter to be analyzed as a possible contaminant. *(Solid Waste Management Board; 329 IAC 9-1-10.6)*

SECTION 5. 329 IAC 9-1-10.8 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-10.8 "Closure" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-13-1-1; IC 13-23

Sec. 10.8. "Closure" means the owner or operator has met all the program requirements of 329 IAC 9-6. Closure does not imply that the site is completely free of contaminants. There may be some acceptable level of contaminants still on site. *(Solid Waste Management Board; 329 IAC 9-1-10.8)*

SECTION 6. 329 IAC 9-1-14 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-14 "Consumptive use" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-11-2-241; IC 13-23

Sec. 14. "Consumptive use", with respect to heating oil, means consumed on the premises **on which the tank is stored. The heating oil exclusion under IC 13-11-2-241(b)(2) does not apply to the storage of heating oil for resale, marketing, or distribution.** *(Solid Waste Management Board; 329 IAC 9-1-14; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1064; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 7. 329 IAC 9-1-14.3 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-14.3 "Contaminant" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-11-2-42; IC 13-23

Sec. 14.3. "Contaminant" has the definition set forth at IC 13-11-2-42. *(Solid Waste Management Board; 329 IAC 9-1-14.3)*

SECTION 8. 329 IAC 9-1-14.5 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-14.5 "Corrective action" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 14.5. "Corrective action" means action taken to minimize, contain, eliminate, remediate, mitigate, or clean up a release, including emergency measures taken as part of an initial response to the release under 329 IAC 9-5-2. *(Solid Waste Management Board; 329 IAC 9-1-14.5)*

SECTION 9. 329 IAC 9-1-14.7 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-14.7 "Corrective action plan" or "CAP" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 14.7. "Corrective action plan" or "CAP" means the corrective action plan described under 329 IAC 9-5-7(a) through 329 IAC 9-5-7(b). *(Solid Waste Management Board; 329 IAC 9-1-14.7)*

SECTION 10. 329 IAC 9-1-25 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-25 "Hazardous substance UST system" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 25. "Hazardous substance UST system" means ~~a~~ **an** UST system that contains any of the following:

(1) A hazardous substance that is:
(A) defined in Section 101(14) of CERCLA (42 U.S.C. 9601(14)); and
(B) not regulated as a hazardous waste under 329 IAC 3.1.

(2) Any mixture of ~~such~~ substances **specified in subdivision (1)(A) or (1)(B)** and petroleum and which is not a petroleum UST system.

(Solid Waste Management Board; 329 IAC 9-1-25; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1065; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3690; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 11. 329 IAC 9-1-27 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-27 "Hydraulic lift tank" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 27. "Hydraulic lift tank" means a tank that holds hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate any of the following:

(1) Lifts.
(2) Elevators.
(3) ~~Other similar~~ Devices **similar to those in subdivision (1) or (2).**

(Solid Waste Management Board; 329 IAC 9-1-27; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1066; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3691; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 12. 329 IAC 9-1-36 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-36 "Petroleum UST system" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 36. "Petroleum UST system" means ~~a~~ **an** UST system that

contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing any of the following:

(1) Motor fuels.
(2) Jet fuels.
(3) Distillate fuel oils.
(4) Residual fuel oils.
(5) Lubricants.
(6) Petroleum solvents.
(7) Used oils.

(Solid Waste Management Board; 329 IAC 9-1-36; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1066; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3692; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 13. 329 IAC 9-1-39.5 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-39.5 "Removal closure" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 39.5. "Removal closure" means a closure where an UST system is completely extracted. *(Solid Waste Management Board; 329 IAC 9-1-39.5)*

SECTION 14. 329 IAC 9-1-41.3 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-41.3 "RISC" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 41.3. "RISC" means the agency's risk integrated system of closure standards as required by IC 13-12-3-2. *(Solid Waste Management Board; 329 IAC 9-1-41.3)*

SECTION 15. 329 IAC 9-1-41.5 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-1-41.5 "SARA" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 41.5. "SARA" means the Superfund Amendments and Reauthorization Act of 1986, as amended, 42 U.S.C. 9601, et. seq., in effect on September 30, 1996, that amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. *(Solid Waste Management Board; 329 IAC 9-1-41.5)*

SECTION 16. 329 IAC 9-1-47 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-47 "Underground release" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 47. "Underground release" means any ~~belowground~~ release **beneath the ground surface.** *(Solid Waste Management Board; 329 IAC 9-1-47; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1068; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 17. 329 IAC 9-1-47.1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-1-47.1 "Underground storage tank" or "UST" defined
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-11-2-241

Sec. 47.1. "Underground storage tank" **or "UST"** has the meaning as set forth in IC 13-11-2-241. *(Solid Waste Management Board; 329 IAC 9-1-47.1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3694; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 18. 329 IAC 9-2-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-2-1 New UST systems
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23; IC 25-31-1

Sec. 1. In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems shall meet the following requirements:

(1) Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion as specified under one (1) of the following:

(A) The tank is constructed of fiberglass-reinforced plastic and meets one (1) of the following:

(i) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohol, and Alcohol-Gasoline Mixtures", ~~1994,~~ **1996,** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Underwriters Laboratories of Canada ~~CAN4-S615-M83,~~ **CAN/ULC-S615-1998,** "Standard for Reinforced Plastic Underground Tanks for Petroleum Products", ~~1983,~~ **1998,** Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(iii) ASTM D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks", revised 1992, American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

(B) The tank is constructed of steel and cathodically protected in the following manner:

(i) The tank is coated with a suitable dielectric material and is cathodically protected.

(ii) Field-installed impressed current systems are designed by a corrosion expert to allow determination of current operating status under 329 IAC 9-3.1-2(3).

(iii) Cathodic protection systems are operated and maintained under 329 IAC 9-3.1-2.

(iv) The tank complies with one (1) or more of the following:

(AA) Steel Tank Institute "sti-P_3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks", STI-P3-98, revised 1998, Steel Tank Association, 570 Oakwood Road, Lake Zurich, Illinois 60047.

(BB) Underwriter Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks", ~~1993,~~ **2000,** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(CC) Underwriters Laboratories of Canada ~~CAN4-S603-M85,~~ **CAN/ULC-S603-92,** "Standards for Steel Underground Tanks for Flammable and Combustible Liquids", **1992,** Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(DD) Underwriter Laboratories of Canada ~~CAN4-603.1-M85,~~ **CAN/ULC-603.1-92,** "Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable

and Combustible Liquids", **1992,** Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(EE) Underwriters Laboratories of Canada CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems", **1998,** Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(FF) NACE International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(GG) Underwriters Laboratories Standard 58, "Steel Underground Tanks for Flammable and Combustible Liquids", ~~1986,~~ **1998,** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(C) The tank is constructed of a steel-fiberglass-reinforced-plastic composite and complies with one (1) or more of the following:

(i) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks", ~~1993,~~ **2000,** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Association for Composite Tanks ACT-100®, "Specification for External Corrosion Protection of FRP Composite Steel USTs, F894-98," revised ~~1998,~~ **2001,** Steel Tank Association, 570 Oakwood Road, Lake Zurich, Illinois 60047.

(D) The tank is constructed of metal without additional corrosion protection measures provided that the following requirements are completed:

(i) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life.

(ii) The owner and operator shall demonstrate that soil resistivity in an installation location is twelve thousand (12,000) ohms per centimeter or greater by using one (1) of the following:

(AA) ASTM Standard G57-78, "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method", revised ~~1978,~~ **1995,** reapproved ~~1984.~~ **2001.** American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

(BB) A standard approved by the commissioner that exhibits the same or greater degree of reliability and accuracy as ASTM Standard G57-78 cited in subitem (AA).

(iii) The owner and operator shall maintain records that demonstrate compliance with items (i) and (ii) for the remaining life of the tank.

(E) The tank construction and corrosion protection are determined by the commissioner to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than clauses (A) through (D).

(2) The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion as specified under one (1) of the following:

(A) The piping is constructed of fiberglass-reinforced plastic and complies with one (1) or more of the following:

(i) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids", 1995, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Underwriters Laboratories Standard 567, **revised 2001,** "Pipe Connectors for Petroleum Products and LP Gas", Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(iii) Underwriters Laboratories of Canada Subject ~~C107C-M1984~~ **CAN/ORD-C 107.7-1993** "Guide for Glass Fibre Reinforced Plastic Pipe and Fittings for Flammable Liquids", **1993,** Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(iv) Underwriters Laboratories of Canada Standard ~~CAN4-S633-M84,~~ **CAN/ULC-S633-99,** "Flexible Underground Hose Connectors", **1999,** Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(B) The piping is constructed of steel and cathodically protected in the following manner:

(i) The piping is coated with a suitable dielectric material and is cathodically protected.

(ii) Field-installed impressed current systems are designed by a corrosion expert to allow determination of current operating status under 329 IAC 9-3.1-2(3).

(iii) Cathodic protection systems are operated and maintained under 329 IAC 9-3.1-2.

(iv) The piping system meets one (1) or more of the following:

(AA) Article 79, "Flammable and Combustible Liquids", of the 1998 Indiana Fire Code under rules of the fire prevention and building safety commission at 675 IAC 22-2.2.

(BB) American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems", Fifth Edition, March 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(CC) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(DD) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0169-96, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems", 1992 Edition, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(C) The piping is constructed of metal without additional corrosion protection measures provided that the following requirements are completed:

(i) The piping is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life.

(ii) The owner and operator shall demonstrate that soil resistivity in an installation location is twelve thousand (12,000) ohms per centimeter or greater by using one (1) of the following:

(AA) ASTM Standard G57-78, "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method", revised ~~1978,~~ **1995,** reapproved ~~1984.~~ **2001.** American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

(BB) A standard approved by the commissioner that exhibits the same or greater degree of reliability and accuracy as ASTM Standard G57-78 cited in subitem (AA).

(iii) The piping complies with one (1) or more of the following:

(AA) Article 79, "Flammable and Combustible Liquids", of the 1998 Indiana Fire Code under rules of the fire prevention and building safety commission at 675 IAC 22-2.2.

(BB) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0169-96, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems", 1992 Edition, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(iv) The owner and operator shall maintain records that demonstrate compliance with items (i) and (ii) for the remaining life of the piping.

(D) The piping is equipped with secondary containment that includes one (1) of the following:

(i) Double-walled piping that consists of an outer wall constructed of a dielectric material.

(ii) Vaulted piping.

(E) The piping construction and corrosion protection are determined by the commissioner to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than clauses (A) through (D).

(3) The following spill and overfill requirements must be completed:

(A) Except as provided in clause (B), the owner and operator shall use the following spill and overfill prevention equipment to prevent spilling and overfilling associated with product transfer to the UST system:

(i) Spill prevention equipment that prevents the release of product to the environment when the transfer hose is detached from the fill pipe as one (1) of the following:

(AA) Minimum five (5) gallon spill catchment basin with drain to tank.

(BB) Minimum twenty-five (25) gallon spill catchment basin without drain to tank.

(ii) Overfill prevention equipment that completes one (1) of the following:

(AA) Automatically shuts off flow into the tank when the tank is no more than ninety-five percent (95%) full.

(BB) Alerts the transfer operator when the tank is no more than ninety percent (90%) full by restricting the flow into the tank or triggering a high level alarm.

(CC) Restricts flow thirty (30) minutes prior to overfilling, alerts the transfer operator with a high level alarm one (1) minute before overfilling, or automatically shuts off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(B) The owner and operator are not required to use the spill and overfill prevention equipment specified in clause (A) if one (1) of the following is completed:

(i) Alternative equipment is used that is determined by the commissioner to be no less protective of human health and the environment than the equipment specified in clause (A).

(ii) The UST system is filled by transfers of no more than twenty-five (25) gallons at one (1) time.

(C) A drop tube for deliveries must extend to within one (1) foot of the tank bottom.

(4) All tanks and piping must be installed properly in accordance with one (1) or more of the following:

(A) American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems", Fifth Edition, March 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(B) Petroleum Equipment Institute Publication PEI/RP100-97, "Recommended Practices for Installation of Underground Liquid Storage Systems", revised ~~1997.~~ **2000.** Petroleum Equipment Institute, P.O. Box 2380, Tulsa, Oklahoma 74101-2380.

(C) American National Standards Institute Standard ANSI/ASME B31.3-1996, "Process Piping", ~~1996,~~ **revised 1999,** American National Standards Institute, 11 West 42nd Street, New York, New York 10036. ASME B31.3a-1996, addenda to ASME B31.3-1996 Edition, Process Piping, An American National Standard, The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017. ASME B31.3b-1997, addenda to ASME B31.3-1996 Edition, Process Piping, An American National Standard, the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017.

(D) American National Standards Institute Standard ANSI/ASME B31.4-1992, "Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols", ~~1992,~~ **revised 1998,** American National Standards Institute, 11 West 42nd Street, New York, New York 10036. ASME B31.4a, addenda to ASME B31.4-1992 Edition, Pipeline Transportation Systems For Liquid Hydrocarbons and Other Liquids, An American National Standard, The American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017.

(5) The owner and operator shall ensure the following:

(A) The installer has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12.

(B) One (1) or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subdivision (4):

(i) The installer has been certified by the tank and piping manufacturers.

(ii) The installation has been inspected and certified by a registered professional engineer under IC 25-31-1 with education and experience in UST system installation.

(iii) The installation has been inspected and approved by one (1) of the following:

(AA) The agency.

(BB) The office of the state fire marshal.

(iv) The owner and operator have complied with another method for ensuring compliance with subdivision (4) that is determined by the commissioner to be no less protective of human health and the environment.

(C) The owner and operator shall provide a certification of compliance on the ~~underground storage tank~~ notification form under section 2 of this rule.

(Solid Waste Management Board; 329 IAC 9-2-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1068; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3695; errata filed Sep 10, 1999, 9:08 a.m.: 23 IR 26; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 19. 329 IAC 9-2-2 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-2-2 Notification requirements

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23-3

Sec. 2. **(a) All notifications required to be submitted under this section must be submitted on a form and in a format prescribed by the commissioner.**

~~(a)~~ **(b)** Any owner who brings ~~a~~ **an** UST system into use shall, within

thirty (30) days of bringing such tank into use, submit notice to the agency to register the tank system. ~~using a form provided by the agency for this notification.~~

~~(b)~~ **(c)** An owner required to submit notice under subsection (a) shall provide notice for each tank the owner owns. The owner may provide notice for several tanks at one (1) location using one (1) form. An owner with tanks located in more than one (1) place of operation shall submit a separate notification form for each separate place of operation.

~~(c)~~ **(d)** An owner required to submit notice under subsection (a) shall provide all the information required by the form provided by the agency for each tank for which notice is submitted.

~~(d)~~ **(e)** All owners and operators of new UST systems shall certify, on each notification form submitted**,** with original signature in ink, compliance with the following requirements:

(1) Installation of all tanks and piping under section 1(5) of this rule.

(2) Cathodic protection of steel tanks and piping under section 1(1) of this rule and section 1(2) of this rule.

(3) Release detection under 329 IAC 9-7-2 and 329 IAC 9-7-3.

(4) Financial responsibility under 329 IAC 9-8.

~~(e)~~ **(f)** All owners and operators of UST systems shall ensure that whoever performs tank system installations, testing, upgrades, closures, removals, and change-in-service is certified by the office of the state fire marshal. The certified person who performs the work shall certify, by original signature in ink on the notification form provided by the agency, that the work performed complies with methods specified by section 1(4) of this rule.

~~(f)~~ **(g)** All owners and operators of UST systems who upgrade the tank system to meet upgrade requirements under 329 IAC 9-2.1 shall, within thirty (30) days of completing the upgrade, submit notice of the upgrade to the agency. ~~as required by subsection (a).~~

~~(g)~~ **(h)** All owners and operators of UST systems who:

(1) temporarily close a tank system under 329 IAC 9-6-5; or

(2) ~~permanently~~ close ~~or perform a change-in-service on~~ a tank system under 329 IAC 9-6-1;

shall, within thirty (30) days of completing such action, submit notice of this action to the agency. ~~as required by subsection (a).~~

~~(h)~~ **(i)** All owners and operators of UST systems who install a method of release detection under 329 IAC 9-7-2 and 329 IAC 9-7-3 shall, within thirty (30) days of completing such action, submit notice of this action to the agency. ~~as required by subsection (a).~~

~~(i)~~ **(j)** Any person who sells a facility with a regulated underground storage tank that:

(1) is being used as ~~a~~ **an** UST system; or

(2) will be used as ~~a~~ **an** UST system;

shall notify the purchaser of such tank of the owner's obligation to submit notice under subsection ~~(a).~~ **(b).**

~~(j)~~ **(k)** An owner and operator of ~~a~~ **an** UST system that is:

(1) in the ground on or after May 8, 1986; and

(2) not taken out of operational life on or before January 1, 1974;

shall notify the agency of the service status of the UST system under 42 U.S.C. 6991a of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996, on a form provided by the agency for this notification. *(Solid Waste Management Board; 329 IAC 9-2-2; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1068; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3699; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 20. 329 IAC 9-2.1-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-2.1-1 Upgrading of existing UST systems

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23-3

Sec. 1. (a) All existing UST systems shall comply with one (1) of the following requirements no later than December 22, 1998:

(1) New UST system performance standards under 329 IAC 9-2-1.

(2) The upgrading requirements under subsections (b) through (d).

(3) Closure requirements under 329 IAC 9-6, including applicable requirements for corrective action under 329 IAC 9-5.

(b) A steel tank must be upgraded to meet one (1) of the following requirements:

(1) A tank is upgraded by cathodic protection and the cathodic protection system meets the requirements of 329 IAC 9-2-1(1)(B)(ii) and 329 IAC 9-2-1(1)(B)(iii), and the integrity of the tank is ensured using one (1) of the following methods:

(A) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system.

(B) The tank has been installed for less than ten (10) years and is monitored monthly for releases under 329 IAC 9-7-4(4) through 329 IAC 9-7-4(8).

(C) The tank has been installed for less than ten (10) years and is assessed for corrosion holes by conducting two (2) tightness tests under 329 IAC 9-7-4(3):

(i) the first tightness test must be conducted prior to installing the cathodic protection system; and

(ii) the second tightness test must be conducted between three (3) months and six (6) months following the first operation of the cathodic protection system.

(D) The tank is assessed for corrosion holes by a method that is determined by the commissioner to prevent releases in a manner that is no less protective of human health and the environment than established in clauses (A) through (C).

(2) A tank is upgraded by internal lining and the following requirements are completed:

(A) The lining is installed under 329 IAC 9-3.1-4.

(B) Within one (1) year after lining and every five (5) years thereafter, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications.

(C) The tank may be lined one (1) time during the service life to meet the upgrading requirements of this subsection.

(3) A tank is upgraded by both internal lining and cathodic protection, and the following requirements are completed:

(A) The lining is installed under 329 IAC 9-3.1-4.

(B) The cathodic protection system meets the requirements of 329 IAC 9-2-1(1)(B)(ii) and 329 IAC 9-2-1(1)(B)(iii).

(4) A tank is upgraded by a method that is determined by the commissioner to be no less protective of human health and the environment than the methods specified in subdivisions (1) through (3).

(5) The tank must comply with one (1) or more of the following:

(A) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks", Fourth Edition,

~~October 1997,~~ **June 2001,** American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(B) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(C) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(D) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection", revised ~~1991,~~ **1992,** National Leak Prevention Association, Route 2, Box 106A, Falmouth, Kentucky 41040.

(c) Metal piping that routinely contains regulated substances and is in contact with the ground must meet the following:

(1) Be cathodically protected in accordance with one (1) or more of the following:

(A) Article 79, "Flammable and Combustible Liquids", of the 1998 Indiana Fire Code, 675 IAC 22-2.2.

(B) American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems", Fifth Edition, March 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(C) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(D) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0169-96, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems", ~~1992~~ **1995** Edition, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(2) Meet the requirements of 329 IAC 9-2-1(2)(B)(ii) and 329 IAC 9-2-1(2)(B)(iii).

(d) All existing UST systems shall comply with the new UST system spill and overfill prevention equipment requirements under 329 IAC 9-2-1(3) and 329 IAC 9-3.1-1 to prevent spilling and overfilling associated with product transfer to the UST system.

(e) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal. *(Solid Waste Management Board; 329 IAC 9-2.1-1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3700)*

SECTION 21. 329 IAC 9-3-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-3-1 Reporting and record keeping

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 1. (a) The owner and operator of ~~a~~ **an** UST system shall cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests for document submission, testing, and monitoring by the owner or operator under Section 9005 (42 U.S.C. 6991d) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996.

(b) The owner and operator shall submit the following information to the agency:

(1) Notification for all UST systems under 329 IAC 9-2-2 that includes:

(A) certification of installation for new UST systems under 329 IAC 9-2-1(5); and

(B) locational information within an accuracy of 1:24,000, plus or minus forty (40) feet, or plus or minus twelve and two-tenths (12.2) meters in any of the following formats, if known:

(i) Universal transverse mercator (UTM) coordinates.

(ii) Latitude and longitude coordinates.

(iii) UTM coordinates and latitude and longitude coordinates.

(2) Reports of all releases, including:

(A) suspected releases under 329 IAC 9-4-1;

(B) spills and overfills under 329 IAC 9-4-4; and

(C) confirmed releases under 329 IAC 9-5-2.

(3) Corrective actions planned or taken, including:

(A) free product removal under ~~329 IAC 9-5-3.1;~~ **329 IAC 9-5-4.2;**

(B) initial abatement measures under ~~329 IAC 9-5-4.1;~~ **329 IAC 9-5-3.2;**

(C) initial site characterization under 329 IAC 9-5-5.1;

(D) investigation of soil and ground water cleanup under 329 IAC 9-5-6; and

(E) corrective action plan under 329 IAC 9-5-7.

(4) A notification upon completion of all upgrade activities under 329 IAC 9-2.1.

(5) A notification before ~~permanent~~ closure or change-in-service under 329 IAC 9-6-1.

(6) A notification upon completion of:

(A) temporary closure under 329 IAC 9-6-5; or

(B) ~~permanent~~ closure or change-in-service under 329 IAC 9-6-1 and ~~329 IAC 9-6-2.~~ **329 IAC 9-6-2.5.**

(7) A notification upon completion of the installation of a method of release detection under 329 IAC 9-7-2 and 329 IAC 9-7-3.

(8) Results of the site investigation conducted at ~~permanent~~ closure or change-in-service under 329 IAC 9-6-4.

(9) Documentation supporting the suitability of the underground storage tank to be upgraded with cathodic protection. The documentation must be submitted within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(1). The documentation must include a signed affidavit from the corrosion expert who designed the field-installed cathodic protection system.

(10) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining. The documentation must be submitted within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(2).

(11) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining combined with cathodic protection. The documentation must be submitted within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(3). The documentation also must include the following:

(A) A report of the condition of the underground storage tank prior to lining that includes the following:

(i) Diagram showing the location and size of any repair necessary to the interior of the underground storage tank prior to lining.

(ii) Diagram showing the location and size of any repair necessary to the exterior of the underground storage tank prior to cathodic protection.

(iii) Documentation showing the tank has met both thickness and tank deflection criteria specified in the publications for upgrades under clause (B).

(B) The suitability of the tank for lining must meet the following requirements:

(i) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks", Fourth Edition, ~~October 1997,~~ **June 2001,** American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(ii) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(iii) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(12) Documentation of operation and maintenance of corrosion protection equipment under 329 IAC 9-3.1-2. The results of the postinstallation cathodic protection:

(A) test for a galvanic cathodic protection system; and

(B) inspection for an impressed current cathodic protection system;

must be submitted within thirty (30) days after the test or inspection is completed for a new UST system and an upgraded UST system.

(13) Documentation supporting the suitability of the excavation zone for the proper function of:

(A) vapor observation wells under 329 IAC 9-7-4(5); and

(B) ground water observation wells under 329 IAC 9-7-4(6);

as a method of release detection. The documentation must be submitted within thirty (30) days after the observation wells installation is completed for a new UST system and an upgraded UST system.

(14) Documentation supporting the suitability of the excavation zone to support a secondary barrier in the excavation zone as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be submitted within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(15) Documentation supporting the suitability of the secondary barrier as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be submitted within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(c) The owner and operator shall maintain the following information:

(1) Documentation of operation and maintenance of corrosion protection equipment under 329 IAC 9-3.1-2. The results of the postinstallation cathodic protection:

(A) test for a galvanic cathodic protection system; and

(B) inspection for an impressed current cathodic protection system;

must be maintained under subsection (d) within thirty (30) days after the test or inspection is completed for a new UST system and an upgraded UST system.

(2) Documentation of UST system repairs under 329 IAC 9-3.1-4(b)(6).

(3) Documentation of compliance with release detection requirements under ~~329 IAC 9-7-6.~~ **329 IAC 9-3-1.**

(4) Results of the site investigation conducted at ~~permanent~~ closure under 329 IAC 9-6-4.

(5) Documentation supporting the suitability of the underground storage tank to be upgraded with cathodic protection. The documentation must be maintained under subsection (d) within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(1). The documentation must include a signed affidavit from the corrosion expert who designed the field-installed cathodic protection system.

(6) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining. The documentation must be maintained under subsection (d) within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(2).

(7) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining combined with cathodic protection. The documentation must be maintained under subsection (d) within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(3). The documentation also must include the following:

(A) A report of the condition of the underground storage tank prior to lining that includes the following:

(i) Diagram showing the location and size of any repair necessary to the interior of the underground storage tank prior to lining.

(ii) Diagram showing the location and size of any repair necessary to the exterior of the underground storage tank prior to cathodic protection.

(iii) Documentation showing the tank has met both thickness and tank deflection criteria specified in the publications for upgrades under clause (B).

(B) A signed certification by a corrosion expert indicating the suitability of the tank for lining under the following:

(i) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks", Fourth Edition, ~~October 1997,~~ **June 2001,** American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(ii) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(iii) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(8) Documentation supporting the suitability of the excavation zone for the proper function of:

(A) vapor observation wells under 329 IAC 9-7-4(5); and

(B) ground water observation wells under 329 IAC 9-7-4(6);

as a method of release detection. The documentation must be maintained under subsection (d) within thirty (30) days after the observation wells installation is completed for a new UST system and an upgraded UST system.

(9) Documentation supporting the suitability of the excavation zone to support a secondary barrier in the excavation zone as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be maintained under subsection (d) within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(10) Documentation supporting the suitability of the secondary barrier as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be maintained under subsection (d) within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(11) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used under 329 IAC 9-2-1(1)(D) or 329 IAC 9-2-1(2)(C). The documentation must be maintained under subsection (d) within thirty (30) days after the analysis is completed.

(12) All written performance claims that pertain to any release detection system used and the manner in which the claim has been justified or tested by the equipment manufacturer or installer. All claims must be maintained for the longest time period of the following time periods:

(A) Five (5) years.

(B) The time period the release detection system is used.

(C) The time period of any unresolved litigation between the commissioner and the owner or operator of the UST system.

(13) The results of any sampling, testing, or monitoring relating to release detection systems must be maintained for at least one (1) year except that the results of tank tightness testing conducted under 329 IAC 9-7-4(3) must be maintained until the next test is conducted.

(14) Documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least one (1) year after the servicing work is completed.

(15) Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be maintained for the longest time period of the following time periods:

(A) Five (5) years from the date of installation.

(B) The time period the release detection system is used.

(d) The owner and operator shall maintain the records required:

(1) at the underground storage tank site and immediately available for inspection by the agency; **or**

(2) at a readily available alternative site and be provided for inspection to the agency upon request. ~~or~~

~~(3)~~ **(e)** In the case of ~~permanent~~ closure records required under 329 IAC 9-6-4, the owner and operator are also provided with the additional alternative of mailing closure records to the agency if they cannot be kept at the site or an alternative site as ~~indicated~~ **allowed** in ~~this~~ subsection **(d)(2).** *(Solid Waste Management Board; 329 IAC 9-3-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1069; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3701; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 22. 329 IAC 9-3-2 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-3-2 Electronic reporting and submittal

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 2. Documentation required to be submitted to the agency by this article, with the exception of reports required under 329 IAC 9-4-4, may be submitted in an electronic format as prescribed by the commissioner. Any documents submitted in an electronic format must also be submitted as a paper copy. *(Solid Waste Management Board; 329 IAC 9-3-2)*

SECTION 23. 329 IAC 9-3.1-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-3.1-1 Spill and overfill control

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 1. (a) The owner and operator shall ensure the following:

(1) Releases due to spilling or overfilling do not occur.

(2) The volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made.

(3) The transfer operation is monitored constantly to prevent overfilling and spilling.

(4) The transfer operation complies with the following:

(A) National Fire Protection Association Publication 385, "Standard for Tank Vehicles for Flammable and Combustible Liquids", ~~1990~~ **2000** Edition, as incorporated by reference under rules of the fire prevention and building safety commission at 675 IAC 22-2.2-21.

(B) Article 79, "Flammable and Combustible Liquids", of the 1998 Indiana Fire Code under rules of the fire prevention and building safety commission at 675 IAC 22-2.2.

(b) The owner and operator shall report, investigate, and clean up any spills and overfills under 329 IAC 9-4-4.

(c) Deliveries must be made through a drop tube that extends to within one (1) foot of the tank bottom. *(Solid Waste Management Board; 329 IAC 9-3.1-1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3704)*

SECTION 24. 329 IAC 9-3.1-2 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-3.1-2 Operation and maintenance of corrosion protection

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 2. The owner and operator of a steel UST system with corrosion protection shall comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that:

(A) routinely contain regulated substances; and

(B) are in contact with the ground.

(2) All UST systems equipped with galvanic cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester under the following requirements:

(A) All galvanic cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter.

(B) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(3) All UST systems with impressed current cathodic protection systems must:

(A) be inspected every sixty (60) days to ensure the equipment is running according to manufacturer's specifications; **and**

(B) be tested within six (6) months of installation and at least every three (3) years thereafter.

(4) Records of the operation of the cathodic protection must be maintained under 329 IAC 9-3 to demonstrate compliance with the performance standards in this section. These records must provide the following:

(A) The results of the most recent three (3) inspections required in subdivision (3).

(B) The results of testing from the last two (2) inspections required in subdivision (2).

(5) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal.

(Solid Waste Management Board; 329 IAC 9-3.1-2; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3704)

SECTION 25. 329 IAC 9-3.1-3 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-3.1-3 Compatibility

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 3. (a) The owner and operator shall use ~~a~~ **an** UST system made of or lined with materials that are compatible with the regulated substance stored in the UST system.

(b) For tanks that store alcohol blends, one (1) or more of the following codes must be used to comply with subsection (a):

(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations", First Edition, April 1985, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(2) American Petroleum Institute Recommended Practice 1627, "Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations", First Edition, August 1986, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(Solid Waste Management Board; 329 IAC 9-3.1-3; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3704)

SECTION 26. 329 IAC 9-3.1-4 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-3.1-4 Repairs and maintenance allowed

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 4. (a) The owner and operator of ~~a~~ **an** UST system shall ensure that repairs **and maintenance** prevent releases due to:

(1) structural failure as long as the UST system is used to store regulated substances; or

(2) corrosion as long as the UST system is used to store regulated substances.

(b) The repairs **and maintenance** must meet the following requirements:

(1) Repairs **and maintenance** to a steel UST system must be conducted in accordance with one (1) or more of the following:

(A) Article 79, "Flammable and Combustible Liquids", of the 1998 Indiana Fire Code, 675 IAC 22-2.2.

(B) American Petroleum Institute Recommended Practice 2200, "Repairing Crude Oil, Liquified Petroleum Gas, and Product Pipelines", Third Edition, May 1994, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(C) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks", Fourth Edition, ~~October 1997,~~ **June 2001,** American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(D) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection", revised ~~1991,~~ **1992,** National Leak Prevention Association, Route 2, Box 106A, Falmouth, Kentucky 41040.

(2) Maintenance to a steel tank lined under 329 IAC 9-2.1-2 is not allowed if thirty percent (30%) or more of the original lined surface of the steel tank has had maintenance performed under subdivision (1). The tank must be replaced.

~~(2)~~ **(3)** Repairs **and maintenance** to a fiberglass-reinforced plastic tank may be made:

(A) by the manufacturer's authorized representative using the manufacturer's specifications; or

(B) by the owner or operator in accordance with one (1) or more of the following:

(i) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohol, and Alcohol-Gasoline Mixtures", ~~1994,~~ **1996,** Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Codes listed in Class 6 of American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks", Fourth Edition, ~~October 1997,~~ **June 2001,** American Petroleum Institute, 1220 L Street NW, Washington, D. C. 20005-4070.

(iii) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection", revised ~~1991,~~ **1992,** National Leak Prevention Association, Route 2, Box 106A, Falmouth, Kentucky 41040.

~~(3)~~ **(4)** The requirements for **repair and maintenance to** pipes and fittings are as follows:

(A) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced.

(B) Fiberglass pipes and fittings may be repaired **or have maintenance performed** in accordance with the manufacturer's specifications.

~~(4)~~ **(5)** The repaired tank and piping must be tightness tested under 329 IAC 9-7-4(3) and 329 IAC 9-7-5(2) within thirty (30) days following the date of the completion of the repair except as provided under one (1) of the following:

(A) The repaired tank is internally inspected in accordance with one (1) or more of the standards listed in subdivision (1) or (2).

(B) The repaired portion of the UST system is monitored monthly for releases under a method specified in 329 IAC 9-7-4(4) through 329 IAC 9-7-4(8).

(C) Another test method is used that is determined by the commissioner to be no less protective of human health and the environment than those listed in clauses (A) and (B).

~~(5)~~ **(6)** Following the repair **and maintenance** of any cathodically

protected UST system, the cathodic protection system must be tested under:

(A) section 2(2) of this rule within six (6) months following the repair for a galvanic cathodic protection system to ensure that it is operating properly; and

(B) section 2(3) of this rule within sixty (60) days following the repair for an impressed current cathodic protection system to ensure that it is operating properly.

~~(6)~~ **(7)** The UST system owner and operator shall maintain records of each repair for the remaining operating life of the UST system that demonstrate compliance with this section. **Maintenance must be documented but is not reported to the agency.**

~~(7)~~ **(8)** The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal.

(Solid Waste Management Board; 329 IAC 9-3.1-4; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3705)

SECTION 27. 329 IAC 9-4-3 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-4-3 Release investigations and confirmation steps

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 3. Unless corrective action is initiated in accordance with 329 IAC 9-5, the owner and operator shall immediately investigate and confirm all suspected releases of regulated substances requiring reporting under section 1 of this rule within seven (7) days using the following steps or another procedure approved by the commissioner:

(1) The owner and operator shall conduct tests according to the requirements for tightness testing in 329 IAC 9-7-4(3) and 329 IAC 9-7-5(2) to determine whether a leak exists in that portion of the tank that routinely contains product or the attached delivery piping, or both. The owner and operator shall complete one (1) of the following:

(A) The owner and operator shall repair, replace, or upgrade the UST system and begin corrective action in accordance with 329 IAC 9-5 if the test results for the system, tank, or delivery piping indicate that a leak exists.

(B) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if ~~environmental contamination is~~ **contaminants are** not present.

(C) The owner and operator shall conduct a site check as described in subdivision (2) if the test results for the system, tank, and delivery piping do not indicate that a leak exists, but ~~environmental contamination is~~ **contaminants are** present.

(2) The owner and operator shall measure for the presence of a release where ~~contamination~~ **the contaminant** is most likely to be present at the underground storage tank site. In selecting sample types, sample locations, and measurement methods, the owner and operator shall consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence and source of the release. The owner and operator shall complete one (1) of the following:

(A) If the test results for the excavation zone or the underground storage tank site indicate that a release has occurred, the owner and operator shall begin corrective action in accordance with 329 IAC 9-5.

(B) If the test results for the excavation zone or the underground storage tank site do not indicate that a release has occurred, further investigation is not required.

(Solid Waste Management Board; 329 IAC 9-4-3; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1070; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3706; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 28. 329 IAC 9-4-4 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-4-4 Reporting and cleanup of spills and overfills

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 4. (a) The owner and operator of ~~a~~ **an** UST system shall contain and immediately clean up a spill or overfill, report **the incident** to the ~~agency~~ **emergency response twenty-four (24) hour spill hotline at (888) 233-7745 in Indiana or (317) 233-7745 as soon as possible but** within twenty-four (24) hours and begin corrective action in accordance with 329 IAC 9-5 in the following cases:

(1) Spill or overfill of petroleum that results in a release to the environment that:

(A) equals or exceeds twenty-five (25) gallons; or

(B) causes a sheen on nearby surface water.

(2) Spill or overfill of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under 40 CFR 302.4, **revised 2000.** The Code of Federal Regulations is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

(b) The owner and operator of ~~a~~ **an** UST system shall contain and immediately remove any contaminated media when one (1) of the following occur:

(1) Spill or overfill of petroleum that is less than twenty-five (25) gallons.

(2) Spill or overfill of a hazardous substance that is less than the reportable quantity under 40 CFR 302.4, **revised 2000.** The Code of Federal Regulations is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

If the removal of any contaminated media cannot be accomplished within twenty-four (24) hours, the owner and operator shall immediately notify the agency. *(Solid Waste Management Board; 329 IAC 9-4-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1070; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3707; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 29. 329 IAC 9-5-1 IS AMENDED TO READ AS FOLLOWS:

Rule 5. Initial Response, Site Investigation, and Corrective Action

329 IAC 9-5-1 Applicability for release response and corrective action

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-12-3-2; IC 13-23

Sec. 1. ~~(a)~~ An owner and operator of a petroleum or hazardous substance UST system shall, in response to a confirmed release from the UST system, comply with the requirements of this rule ~~except for~~ **unless the** UST ~~systems~~ **system is** excluded under 329 IAC 9-1-1(b) ~~and~~ **or the** UST ~~systems~~ **system is** subject to corrective action requirements under Section 3004(u) (42 U.S.C. 6924(u)) of the Solid

Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996.

(b) The owner and operator shall conduct corrective action that meets the following requirements:

(1) The corrective action plan is in the following format:

(A) Executive summary, including the following:

(i) A briefing about the site in narrative form, highlighting events regarding the need for corrective action.

(ii) Other information regarding the need for corrective action.

(B) A narrative concerning contaminant and site conditions, including the following:

(i) Contaminant identification including chemical and physical properties.

(ii) Contaminant toxicological data.

(iii) Potential effects of residual contamination.

(iv) Site specific soil and hydrogeologic characteristics.

(v) Proximity of local surface waters and ground water and associated water quality data.

(vi) Current and potential future uses of local water sources.

(vii) A summary of site specific water quality data generated during previously completed site investigations.

(viii) Other information necessary to describe site conditions.

(C) Health and safety plan, including the following:

(i) Known hazards and risk evaluation associated with site activities.

(ii) List of personnel, alternates to personnel, and areas of responsibilities of personnel.

(iii) Levels of personal protection for personnel.

(iv) Decontamination equipment and procedures.

(v) Site access control measures.

(vi) Site emergency procedures, medical care availability, and a route by roadway to health care facilities.

(vii) List of emergency phone numbers that includes the fire department, the police department, a local ambulance, and the local hospital or medical facility.

(viii) List of personnel's training, qualifications, and certifications.

(ix) A description of how the plan will meet health and safety requirements.

(D) An appropriately scaled regional map that can be reproduced from previously submitted and approved site investigation reports but must include the following:

(i) Illustrated legends and compass directions.

(ii) A legible, topographic base with ten (10) foot contour intervals.

(iii) Location and depth of any wells that have a capacity greater than seventy (70) gallons per minute within a two (2) mile radius of the site.

(iv) Location and depth of any wells that have a capacity of less than seventy (70) gallons per minute within a one (1) mile radius of the site.

(v) Identification of facilities and land for agricultural, residential, commercial, and industrial use within a one (1) mile radius of the site.

(vi) Locations of surface water within a one (1) mile radius of the site.

(vii) Site location.

(E) Appropriately scaled site maps that can be reproduced from previously submitted and approved site investigation reports but must include the following:

(i) Illustrated legends and compass directions.

(ii) Topographic base with appropriate contour intervals to accurately describe the site.

(iii) Identified above ground features, including buildings, roadways, manways, pump islands, and property lines.

(iv) Identified subsurface features, including tanks, piping, and utility conduits.

(v) Soil boring and monitoring well locations surveyed to one-hundredth (.01) foot accuracy from an on-site temporary benchmark.

(vi) Both field and laboratory sampling locations, depth of sample taken, and the contaminant concentration results.

(vii) Contaminant plume delineation.

(viii) Ground water flow direction.

(ix) The location of remediation equipment shown, to scale.

(F) Geologic and hydrogeologic maps that describe subsurface features and contaminant plume identification and include the following:

(i) Cross sections.

(ii) Fence diagrams.

(iii) Geophysical profile or geophysical maps, or both, if available.

(G) A narrative on selected remediation technology that includes the following:

(i) Feasibility studies showing the effectiveness of the selected remediated technology.

(ii) A detailed description of the selected technology, design explanations, and illustrations.

(iii) Projected contaminant removal or treatment rates, or both.

(iv) Technical specifications of equipment and the process.

(H) Sampling and analysis plan to evaluate the performance of the remediation technology that includes the following:

(i) A minimum of quarterly samples taken and reported.

(ii) The following as applicable:

(AA) Field investigation procedures.

(BB) Field screen samples.

(CC) Laboratory procedures for checking sample validity, sample acquisition, container, preservation, shipping requirements, storage time, chain of custody, and decontamination of equipment between samples.

(DD) Provisions for retention of laboratory quality assurance and quality control information.

(EE) Documentation that the sampling and analysis will be conducted in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", United States Environmental Protection Agency Publication SW-846, Third Edition (November 1986) as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), and III (December 1996). Publication SW-846 is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

(FF) Provisions for submission of reports that must include a signed laboratory certificate of analysis that lists analysis method, method preparation, date of sample receipt, date of analysis, a statement that the method quality assurance and quality control procedures were followed, the chain of custody documentation, including laboratory receipts, decontamination procedures, and sampling procedures and techniques.

(I) Timetable that includes the following shown on a Gandt chart:

(i) Installation and implementation dates.

(ii) Sampling events.

~~(iii) Progress milestones.~~
~~(iv) Completion dates.~~
~~(J) Provisions for progress reports to be submitted that include the following:~~
~~(i) Brief narrative of the remediation process.~~
~~(ii) Documentation and data graphically demonstrating remediation effectiveness.~~
~~(iii) Quarterly sampling results.~~
~~(K) Provisions for a final report that includes:~~
~~(i) documentation that the clean-up goals and objectives have been achieved; and~~
~~(ii) a signature by either a professional engineer, professional geologist, hydrologist, or certified hazardous materials manager.~~
~~(2) The soil clean-up objectives must be determined and met by complying with IC 13-12-3-2.~~
~~(3) The ground water clean-up objectives must be determined and met by complying with IC 13-12-3-2.~~

~~(c) The owner and operator may conduct another method of corrective action that is:~~
~~(1) as protective of human health and the environment as that provided in subsection (b); and~~
~~(2) approved by the commissioner.~~
(Solid Waste Management Board; 329 IAC 9-5-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1071; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3707; errata filed Sep 10, 1999, 9:08 a.m.: 23 IR 26; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 30. 329 IAC 9-5-2 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-5-2 Initial response
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 2. Upon confirmation of a release in accordance with 329 IAC 9-4-3 or after a release from the UST system is identified in any other manner, the owner and operator shall perform the following initial response actions within twenty-four (24) hours of a release:

(1) Report the release to the agency:
(A) by telephone at (317) 232-8900 or after hours or holidays at (317) 233-7745;
(B) by fax at (317) 234-0428; or
(C) at LeakingUST@dem.state.in.us for electronic mail.

(2) Take immediate action to prevent any further release of the regulated substance into the environment.

(3) Identify and mitigate fire, explosion, and vapor hazards.

(4) Mitigate to the extent practicable adverse effects to human health and the environment.
(Solid Waste Management Board; 329 IAC 9-5-2; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1071; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3709; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 31. 329 IAC 9-5-3.2 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-5-3.2 Initial abatement measures and site check
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 3.2. (a) The owner and operator shall perform the following abatement measures:

(1) Remove as much of the regulated substance from the UST system as necessary to prevent further release to the environment.

(2) Visually inspect any aboveground releases or exposed belowground releases and prevent further migration of the released substance into surrounding soils and ground water.

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the underground storage tank excavation zone and entered into subsurface structures, which may include:
(A) storm sewers;
(B) sanitary sewers;
(C) utility lines;
(D) inhabitable buildings with a basement or crawl space; or
(E) underground conduits.

(4) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner and operator shall comply with applicable state and local requirements.

(5) Measure for the presence of a release where the contaminant is most likely to be present at the underground storage tank site unless the presence and source of the release have been confirmed in accordance with the site check required by 329 IAC 9-4-3(2) or the closure site assessment of 329 IAC 9-6-2.5. In selecting sample types, sample locations, and measurement methods, the owner and operator shall consider the nature of the stored substance, the type of backfill, depth to ground water, and other factors as appropriate for identifying the presence and source of the release.

(6) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with section 4.2 of this rule.

(b) If:
(1) drinking water is affected;
(2) free product is present; or
(3) vapors are present in:
(A) storm sewers;
(B) sanitary sewers;
(C) utility lines;
(D) inhabitable buildings with a basement or crawl space; or
(E) underground conduits;

within twenty (20) days after release confirmation, the owner and operator shall submit a report to the agency summarizing the initial abatement measures taken under subsection (a) and any resulting information or data. *(Solid Waste Management Board; 329 IAC 9-5-3.2)*

SECTION 32. 329 IAC 9-5-4.2 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-5-4.2 Free product removal
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 4.2. At sites where investigations indicate the presence of free product, the owner and operator shall remove free product to the maximum extent practicable as determined by the commissioner based on free product removal technology and site conditions while continuing, as necessary, any actions initiated under sections 2, 3.2, and 5.1 of this rule, or preparation for actions required under sections 6 and 7 of this rule. In meeting the requirements of this section, the owner and operator shall do the following:

(1) Conduct free product removal in a manner that:
(A) minimizes the spread of the contaminant into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site; and
(B) properly treats, discharges, or disposes of recovery products and byproducts in compliance with applicable local, state, and federal regulations.
(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system.
(3) Handle any flammable products in a manner so as to prevent fires or explosions in accordance with the site health and safety plan as required by section 7(e) of this rule.
(4) Unless directed to do otherwise by the commissioner, prepare and submit to the agency, within forty-five (45) days after confirming a release, a free product removal report that provides at least the following information:
(A) The name of the person responsible for directing the free product removal measures.
(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations.
(C) The type of free product recovery system used.
(D) Whether any discharge of free product will take place on-site or off-site during the recovery operation and where this discharge will be located.
(E) The type of treatment applied to, and the effluent quality expected from, any discharge.
(F) The steps that have been, or are being taken, to obtain necessary permits for any discharge.
(G) The disposition of the recovered free product.

(Solid Waste Management Board; 329 IAC 9-5-4.2)

SECTION 33. 329 IAC 9-5-5.1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-5-5.1 Initial site characterization
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23; IC 25-17.6; IC 25-31-1; IC 25-31.5-4

Sec. 5.1. (a) The owner and operator shall assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial **response and** abatement measures in sections 2 and ~~4.1~~ **3.2** of this rule. This information must include the following:

(1) Data on the nature and estimated quantity of release.

(2) Data from available sources or site investigations, or both, concerning the following factors:

(A) Surrounding populations.

(B) **Surface and ground** water quality.

(C) Use and approximate locations of all wells ~~within:~~ **potentially affected by the release but at minimum include those wells specified in subsection (b)(2)(E)(v)(CC) and (b)(2)(E)(v)(DD).**
~~(i) a one (1) mile radius for ground water wells for background;~~
~~(ii) a two (2) mile radius for municipal water supply wells for investigations;~~
~~(iii) a two (2) mile radius for wells with a capacity greater than seventy (70) gallons per minute for investigation; and~~
~~(iv) a one (1) mile radius for wells with a capacity less than seventy (70) gallons per minute for investigation.~~

(D) Subsurface soil conditions.

(E) Locations of **on-site or adjacent subsurface features.**
~~(i) storm sewers;~~
~~(ii) sanitary sewers;~~
~~(iii) utility lines; and~~
~~(iv) french drains.~~

(F) Climatological conditions.

(G) Land use.

(3) Results of the site check required under section ~~4.1(a)(5)~~ **3.2(a)(5)** of this rule.

(4) Results of the free product investigations required under section ~~4.1(a)(6)~~ **3.2(a)(6)** of this rule, to be used by the owner and operator to determine whether free product must be recovered under section ~~3.1~~ **4.2** of this rule.

(5) Known or expected extent of ~~contamination.~~ **the contaminant or contaminants.**

(6) Information requested by the commissioner.

(b) Within forty-five (45) days of release confirmation, the owner and operator shall submit the information collected under subsection (a) to the agency as follows:

(1) In a manner that demonstrates the applicability and technical adequacy of the information.

(2) In a format **as required by the agency that includes the information** as follows:

(A) Background, including the following:
(i) The owner's and operator's name and address.
(ii) Past owners' and operators' names and addresses.
(iii) The facility name, address, and telephone number.
(iv) All prior and present operations of the facility.
(v) Prior construction activities.
(vi) List prior spills at the facility.
(vii) Site proximity to sensitive areas, such as **residences,** schools, and well fields.
(viii) Subsurface soil descriptions.
(ix) ~~Location of~~ **Information known about** all ground water wells within a one (1) mile radius of the facility.
(x) Description of all site work completed **and the date the site work was completed.**
(xi) Number and volume of underground storage tank or tanks.
(xii) Underground storage tank construction material and type of leak detection.
(xiii) Past and present contents of each underground storage tank.
(xiv) Records of most recent tightness test results, inventory records, and underground storage tank gaging records for the prior calendar year.
(xv) Underground storage tank age and date of installation.
(xvi) Underground storage tank system closure report submittal date, if applicable.

(B) Release incident description, including the following:
(i) Date reported to the ~~department.~~ **agency.**
(ii) Release incident number given by the ~~department~~ **agency** at the initial report.
(iii) Assigned ~~departmental~~ **agency** site priority ranking obtained at the initial report.
(iv) List material or materials released.
(v) List volume lost.
(vi) List areas affected, such as the soil, ground water, **surface water features,** or ~~sewers.~~ **subsurface conduits.**
(vii) Health and environmental risks associated with the spill incident.

(C) Initial response and abatement information, including the following:
(i) Detailed description of immediate actions **taken** to ~~present~~ **prevent** any further release.

(ii) Measures taken to prevent further migration of the spill.
(iii) Actions taken to identify and mitigate fire and explosion hazards posed by vapors or free product.
(iv) Actions **taken** to investigate free product release.

(D) Free product recovery information, including the following:
(i) Name of person or persons responsible for product removal.
(ii) Estimated quantity, type, and thickness of product observed or discovered.
(iii) A description of the recovery system.
(iv) Copies of all permits from local, state, and federal agencies necessary for handling, treating, discharging, and disposing of the contaminants.
(v) Final disposition of the recovered free product **and associated documentation.**

(E) Investigation information, including the following:
(i) Types of bedrock.
(ii) Soil series description.
(iii) List of regional soil and geologic references used.
(iv) Regional hydrogeological references used.
(v) Appropriately scaled regional maps with the following:
(AA) Illustrated legends, **scale,** and compass direction.
(BB) Topographic base with ten (10) foot contour intervals.
(CC) Location, depth, and corresponding department of natural resources' well records ~~of~~ **for** wells ~~with~~ **located within a two (2) mile radius of the site that have** a capacity **of** over seventy (70) gallons per minute ~~and~~ **or that are** municipal water supply wells. ~~within a two (2) mile radius of the site.~~
(DD) Location, depth, and corresponding department of natural resources' well records ~~of~~ **for** wells with a capacity of less ~~that~~ **than** seventy (70) gallons per minute within a one (1) mile radius of the site.
(EE) Identification of facilities and land for agricultural, industrial, and commercial use within one (1) mile radius of the site.
(FF) Locations of surface water **features** within a one (1) mile radius of the site.
(vi) Site-specific geologic information as follows:
(AA) A minimum of three (3) on-site, continuously sampled soil borings.
(BB) Soil borings **locations,** accurately field surveyed with a horizontal closure of less than one (1) foot error. ~~placed as needed to confirm the extent of soil contamination.~~
(CC) Site soil stratigraphy identification, including cross sections.
(DD) Boring logs that give lithologic descriptions, degree of sorting, sedimentary contacts, gas readings, and vapor readings.
(EE) Boring logs with the same vertical scale and including surface elevations.
(vii) Hydrogeologic information, including the following:
(AA) Depth to ground water. ~~with seasonal fluctuations determined by at least quarterly monitoring events.~~
(BB) **Ground water** flow directions and gradients.
(CC) Hydraulic conductivity, transmissivity, storativity, confined or unconfined condition, porosity **of the aquifer or aquifers involved,** and **the** average linear velocity of the **ground water in the** aquifer or aquifers involved.
(DD) A minimum of three (3) monitoring wells screened across water table fluctuation and not placed in a straight line.
(EE) Monitoring wells ~~placed as needed to confirm extent of ground water contamination.~~ **must be installed as per the requirements of rules of the department of natural resources at 312 IAC 13 and the criteria established in RISC.**
(FF) Monitoring well location surveyed to a temporary benchmark with a vertical accuracy of one-hundredth (.01) foot and with a horizontal closure of less than one (1) foot.
(GG) Well construction records submitted with the same scale that includes surface and the top of the well casing elevations **and well screen length, and depth to the top and bottom of screen.**
(viii) Contamination plume identification and maps, appropriately scaled, that include the following:
~~(AA) The horizontal and vertical extent of contamination must be defined.~~
~~(BB)~~ **(AA)** Illustrated legends, **scale,** and compass directions.
~~(CC)~~ **(BB)** Topographic base with appropriate contour intervals to accurately describe the site.
~~(DD)~~ **(CC)** Identification of aboveground features, including buildings, roadways, manways, pump islands, and property lines.
~~(EE)~~ **(DD)** Identification of subsurface features, including tanks, piping, and utility conduits, **storm sewers, sanitary sewers, utility lines, and french drains.**
~~(FF)~~ **(EE)** Soil borings and monitoring well locations surveyed to a temporary benchmark with ~~an~~ **a horizontal closure accuracy of one (1) foot, and a vertical** accuracy of one-hundredth (.01) foot.
~~(GG) Both field and laboratory~~ **(FF)** Sampling locations, depth of sample taken, and the contaminant concentration results.
~~(HH)~~ **(GG)** Horizontal and vertical contaminant plume identification.
~~(II)~~ **(HH)** Geologic cross sections showing the water table and illustrating **the** vertical **extent of the** contaminant plume. ~~identification.~~
~~(JJ)~~ **(II)** Ground water flow directions.

(F) Sampling information, including the following:
(i) Field investigation procedures.
(ii) Field screen samples.
(iii) Laboratory procedures that include checking sample validity, sample acquisition, container, preservation, shipping requirements, storage time, chain of custody, and decontamination of equipment between samples.
(iv) Provisions for retention of laboratory quality assurance and quality control information, so that the information may be made available to representatives of the ~~department~~ **agency** upon request.
(v) Documentation that the sampling and analysis conducted was in accordance with ~~"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", United States Environmental Protection Agency Publication SW-846, Third Edition (November 1986) as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), and III (December 1996). Publication SW-846 is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.~~ **RISC.**
(vi) A report that includes a signed laboratory certificate of analysis that lists analysis method, method preparation, date of sample receipt, date of analysis, a statement that the method quality assurance and quality control procedures were followed, the chain of custody documentation, including laboratory receipts, decontamination procedures, and sampling procedures and techniques.
(vii) Analytical methods and corresponding detection limits in ~~the tables at 329 IAC 9-1-10.2.~~ **accordance with RISC.**

(G) Results and conclusions that include the following:
(i) Discussion of the results of the site investigation.
(ii) Field and laboratory sample results in a tabular format.
(H) Recommendations that include ~~the following:~~
~~(i) Feasibility studies.~~
~~(ii) Discussion of effective remediation alternatives, including the following for each alternative:~~
~~(AA) Overall effectiveness of technology.~~
~~(BB) Ability to achieve clean-up criteria.~~
~~(CC) Expected treatment duration.~~
~~(DD) Treatment reliability.~~
~~(EE) Permits that will be required.~~
a discussion of the need for further site investigations to determine the nature and extent of the contaminants.
(3) In a report that is signed by ~~an environmental professional that may include:~~ **a:**
(A) registered professional engineer under IC 25-31-1;
(B) ~~certified~~ **licensed** professional geologist under IC 25-17.6; ~~or~~
(C) certified hazardous materials manager; ~~(CHMM);~~ **or**
(D) professional soil scientist registered under IC 25-31.5-4.

(c) The commissioner may approve an alternative procedure for initial site characterization only if the procedure provides substantially equal protection for human health and the environment as the initial site characterization in subsections (a) and (b) **and is in the format as described in subsection (b)(2) through (b)(3).** *(Solid Waste Management Board; 329 IAC 9-5-5.1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3710; errata filed Sep 10, 1999, 9:08 a.m.: 23 IR 26; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 34. 329 IAC 9-5-6 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-5-6 Further site investigations for soil and ground water cleanup
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 6. (a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product ~~contamination~~ **as a contaminant** of the ground water, the owner and operator shall conduct ~~investigations~~ **a further site investigation** of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:
(1) Information collected and submitted in section 5.1 of this rule is incomplete and fails to define the nature and extent of contamination in the soil and ground water.
~~(1)~~ **(2)** There is evidence that ground water wells have been affected by the release. This evidence may include any found during release confirmation or previous corrective action measures.
~~(2)~~ **(3)** Free product is found to need recovery in compliance with section ~~3.1~~ **4.2** of this rule.
~~(3)~~ **(4)** There is evidence that contaminated soils may be in contact with ground water. This evidence may include any found while conducting the initial response measures or investigations required under sections 1 through 5.1 of this rule *[329 IAC 9-5-3, 329 IAC 9-5-4, and 329 IAC 9-5-5 were repealed filed Jul 19, 1999, 12:00 p.m.: 22 IR 3761.]*.
~~(4)~~ **(5)** The commissioner requests ~~an~~ **a further site** investigation based on the potential effects of contaminated soil or ground water on nearby surface water and ground water resources.

(b) The owner and operator shall submit the information collected under subsection (a) as soon as practicable or in accordance with a schedule established by the commissioner **in the format described in section 5.1(b)(2) and 5.1(b)(3) or 5.1(c) of this rule.**

(c) Discussion of effective remediation alternatives, including the following for each alternative:
(1) Overall effectiveness of technology.
(2) Ability to achieve clean-up criteria.
(3) Expected treatment duration.
(4) Treatment reliability.
(5) Permits that will be required.
(Solid Waste Management Board; 329 IAC 9-5-6; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1072; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3712; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 35. 329 IAC 9-5-7 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-5-7 Corrective action plan
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23-8-4; IC 25-17.6; IC 25-31-1; IC 25-31.5-4

Sec. 7. (a) At any point after reviewing the information submitted in compliance with sections 1, 2, ~~4.1,~~ **3.2,** and 5.1 of this rule, the commissioner may require the owner and operator to:
(1) submit additional information; or
(2) develop and submit a corrective action plan for responding to contaminated soils and ground water.
If a plan is required, the owner and operator shall submit the plan according to a schedule established by the commissioner and the format designated under ~~section 1(b)(1) of this rule.~~ **subsection (f).** Alternatively, the owner and operator may, after fulfilling the requirements of sections 2, ~~4.1,~~ **3.2,** and 5.1 of this rule, choose to submit a corrective action plan for responding to contaminated soil and ground water. In either case, the owner and operator are responsible for submitting a plan that provides for adequate protection of human health and the environment, as determined by the commissioner, and shall modify their plan as necessary to meet this standard. ~~The corrective action plan may be automatically deemed approved under subsection (f).~~

(b) The commissioner will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the commissioner shall consider the following factors, as appropriate:
(1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration.
(2) The hydrogeologic characteristics of the facility and the surrounding area.
(3) The proximity, quality, and current and future uses of nearby surface water and ground water.
(4) The potential effects of **a** residual ~~contamination~~ **contaminant** on nearby surface water and ground water.
(5) The proximity of potential contaminant receptors, including adjacent residences.
~~(5)~~ **(6)** An exposure assessment.
~~(6)~~ **(7)** Any information assembled in compliance with this rule.
~~(7)~~ **(8)** The suitability of the chosen remediation method for site conditions.

(c) Upon approval of the corrective action plan or as directed by the commissioner, the owner and operator shall implement the plan,

including modifications to the plan made by the commissioner. The owner and operator shall monitor, evaluate, and report the results of implementing the plan in accordance with a schedule and in a format established by the commissioner.

(d) The owner and operator may, in the interest of minimizing ~~environmental contamination~~ **the effect of a contaminant** and promoting more effective cleanup, begin cleanup of soil and ground water before the corrective action plan is approved provided that the owner and operator:

(1) notify the agency of their intention to begin cleanup;

(2) comply with any conditions imposed by the commissioner, including halting cleanup or mitigating adverse consequences from cleanup activities; and

(3) incorporate these self-initiated cleanup measures in the corrective action plan that is submitted to the commissioner for approval.

(e) During corrective action, the owner and operator and their designees shall adhere to a written health and safety plan that meets all applicable requirements of the occupational safety standards commission, and the rules of the fire prevention and building safety commission, 675 IAC 22-2.2.

(f) ~~If requirements are satisfied under IC 13-23-8-4(a)(5)(A) and IC 13-23-8-4(a)(5)(B), the corrective action plan is automatically deemed approved under IC 13-23-8-4(a)(5).~~ **The owner and operator shall conduct corrective action that meets the following requirements:**

(1) The corrective action plan must be presented in a format prescribed by the commissioner and contain the following information:

(A) Executive summary, including the following:

(i) A briefing about the site in narrative form, highlighting events leading to the need for corrective action.

(ii) Other information regarding the need for corrective action.

(B) A narrative concerning contaminant and site conditions, including the following:

(i) Contaminant identification including chemical and physical properties.

(ii) Determination of chemical reference doses (RfDs), cancer slope factors (Sfs or CPFs), reference ingestion factors, and maximum contaminant levels.

(iii) Potential effects of residual contaminants.

(iv) Site specific soil and hydrogeologic characteristics.

(v) Proximity of local surface waters and ground water and associated water quality data.

(vi) Current and potential future uses of local water sources.

(vii) A summary of site specific water quality data generated during previously completed site investigations.

(viii) Other information necessary to describe site conditions.

(C) Health and safety plan for corrective action activities, including the following:

(i) Known hazards and risk evaluation associated with site activities.

(ii) List of personnel, alternates to personnel, and areas of responsibilities of personnel.

(iii) Levels of personal protection for personnel.

(iv) Decontamination equipment and procedures.

(v) Site access control measures.

(vi) Site emergency procedures, medical care availability, and a route by roadway to at least one (1) health care facility.

(vii) List of emergency phone numbers that includes the fire department, the police department, a local ambulance, and the local hospital or medical facility.

(viii) List of personnel training, qualifications, and certifications.

(ix) A description of how the plan will meet health and safety requirements of the Indiana occupational health and safety standards and the rules of the fire prevention and building safety commission at 675 IAC 22-2.2.

(D) An appropriately scaled regional map that can be reproduced from previously submitted and approved site investigation reports but that must include the following:

(i) Illustrated legends, scale, and compass directions.

(ii) A legible, topographic base with ten (10) foot contour intervals.

(iii) Location and depth of any wells that have a capacity greater than seventy (70) gallons per minute within a two (2) mile radius of the site.

(iv) Location and depth of any wells that have a capacity of less than seventy (70) gallons per minute within a one (1) mile radius of the site.

(v) Identification of facilities and land for agricultural, residential, commercial, and industrial use within a one (1) mile radius of the site.

(vi) Locations of surface water features within a one (1) mile radius of the site.

(vii) Site location.

(E) Appropriately scaled site maps that can be reproduced from previously submitted and approved site investigation reports that must include the following:

(i) Illustrated legends, scales, and compass directions.

(ii) Topographic base with appropriate contour intervals to accurately describe the site.

(iii) Identified aboveground features, including buildings, roadways, manways, pump islands, and property lines.

(iv) Identified subsurface features, including tanks, piping, and utility conduits.

(v) Soil boring and monitoring well locations surveyed with a horizontal closure of less than one (1) foot error.

(vi) Sampling locations, depth of sample taken, and the contaminant concentration results.

(vii) Soil and ground water contaminant plume delineation.

(viii) Ground water elevation contours and ground water flow direction.

(ix) The location of remediation equipment shown, to scale.

(F) Geologic and hydrogeologic maps that describe subsurface features, identify the contaminant plume and include the following:

(i) Cross sections.

(ii) Fence diagrams.

(iii) Geophysical profile or geophysical maps, or both, if available.

(G) A narrative on selected remediation technology that includes the following:

(i) Feasibility studies showing the effectiveness of the selected remediated technology.

(ii) A detailed description of the selected technology, design explanations, and illustrations.

(iii) Projected contaminant removal or treatment rates, or both.

(iv) Technical specifications of equipment and the process.

(H) Sampling and analysis plan to evaluate the performance of the remediation technology that includes the following:

(i) A minimum of quarterly samples taken and reported.
(ii) The following as applicable:
(AA) Field investigation procedures.
(BB) Field screen samples.
(CC) Sampling methods and laboratory procedures conducted in accordance with RISC, but at a minimum will generate scientifically valid data.
(DD) Provisions for retention of laboratory quality assurance and quality control information.
(EE) Documentation that the sampling, quality assurance measures, and analysis will be conducted in accordance with RISC.
(FF) Provisions for submission of reports that must include a signed laboratory certificate of analysis that lists analysis method, method preparation, date of sample receipt, date of analysis, a statement that the method quality assurance and quality control procedures were followed, the chain of custody documentation, including laboratory receipts, and laboratory decontamination procedures.
(I) Timetable that includes the following shown on a bar chart:
(i) Installation and implementation dates.
(ii) Sampling events.
(iii) Progress milestones.
(iv) Completion dates.
(J) Provisions for the corrective action plan to be signed by an environmental professional that is a:
(i) registered professional engineer under IC 25-31-1;
(ii) licensed professional geologist under IC 25-17-6;
(iii) certified hazardous materials manager; or
(iv) professional soil scientist registered under IC 25-31.5-4.
(K) Provisions for progress reports to be submitted quarterly in a format prescribed by the commissioner that include the following:
(i) Brief narrative of the remediation process.
(ii) Documentation and data graphically demonstrating remediation effectiveness.
(iii) Quarterly sampling results presented in a tabular format as prescribed by the commissioner with all previous sample data, if previous samples were taken.
(iv) Quarterly ground water elevation gauging results presented in a tabular format, as prescribed by the commissioner, showing wellhead or measuring point elevation, depth to ground water, and ground water elevation.
(v) Updated site maps showing soil and ground water contaminant plume delineations, ground water elevation contours, and ground water flow directions.
(vi) Signed by an environmental professional that is a:
(AA) registered professional engineer under IC 25-31-1;
(BB) licensed professional geologist under IC 25-17.6;
(CC) certified hazardous materials manager; or
(DD) professional soil scientist registered under IC 25-31.5-4.
(vii) Discussion of remediation system function, days of operation, and explanation for any time periods remediation system does not function. This discussion must include volumes pumped with the remediation system.
(L) Provisions for a final report that includes:
(i) documentation that the clean-up goals and objectives have been achieved; and
(ii) a signature by an environmental professional that is a:
(AA) registered professional engineer under IC 25-31-1;
(BB) licensed professional geologist under IC 25-17-6;
(CC) certified hazardous materials manager; or
(DD) professional soil scientist registered under IC 25-31.5-4.
(2) The soil clean-up objectives must be determined and met by complying with RISC.
(3) The ground water clean-up objectives must be determined and met by complying with RISC.

(Solid Waste Management Board; 329 IAC 9-5-7; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1072; errata, 16 IR 1955; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3713; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 36. 329 IAC 9-6-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-6-1 Applicability
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 1. (a) ~~At least thirty (30) days before beginning either permanent closure or a change-in-service, the owner and operator shall notify the agency of their intent to permanently close or make the change-in-service unless such action is in response to corrective action. The required assessment of the excavation zone under section 2 of this rule must be performed:~~
~~(1) after notifying the agency; and~~
~~(2) before completion of the permanent closure or change-in-service.~~

~~(b) Continued use of a UST system to store a nonregulated substance is considered a change-in-service. Before a change-in-service, the owner and operator shall complete the following:~~
~~(1) Empty and clean the tank by removing all liquid and accumulated sludge.~~
~~(2) Conduct a site assessment in accordance with section 2 of this rule.~~

~~(c) To permanently close a tank, the owner and operator shall complete the following:~~
~~(1) Empty and clean the tank by removing all liquids and accumulated sludges.~~
~~(2) Complete either of the following:~~
~~(A) Remove the tank from the ground under section 2(a) or 2(b) of this rule.~~
~~(B) Fill the tank with an inert solid material under section 2(d) of this rule.~~

Closure of an UST system must be completed by one (1) of the following methods and the applicable requirements in section 2.5 of this rule:
(1) In-place closure as defined at 329 IAC 9-1-27.3.
(2) Removal closure as defined at 329 IAC 9-1-39.5.
(3) Change-in-service as defined at 329 IAC 9-1-10.4.

(Solid Waste Management Board; 329 IAC 9-6-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1073; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3714; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 37. 329 IAC 9-6-2.5 IS ADDED TO READ AS FOLLOWS:

329 IAC 9-6-2.5 Closure procedure
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 2.5. (a) The procedure for closure is as follows:
(1) At least thirty (30) days before beginning closure, the owner and operator shall notify, using the notification form required by 329 IAC 9-2-2(a), the agency and the office of the state fire marshal of the intent to close as specified by one (1) of the

methods in section 1 of this rule unless such action is a part of the response to corrective action.

(2) Closure sampling, laboratory analysis with the associated detection limits for the UST system closure are required as follows:

(A) Quantity and location of soil samples for each closure method are as follows:

(i) In-place closure soil samples must be taken as described in subsection (b).

(ii) Removal closure soil samples must be taken as described in subsection (c).

(iii) Change-in-service soil samples must be taken as described in subsection (d).

(B) Quantity and location of ground water samples for each closure method are as follows:

(i) In-place closure ground water samples must be taken as described in subsection (e).

(ii) Removal closure ground water samples must be taken as described in subsection (f).

(iii) Change-in-service ground water samples must be taken as described in subsection (g).

(C) Laboratory analyses and detection limits for soil samples and ground water samples for all closure methods are as required for the chemical of concern by the criteria under RISC.

(3) If, at any time during the closure process for any method of closure, a release is either suspected or detected in the backfill, native soil, or ground water, the owner or operator shall contact the agency to report within twenty-four (24) hours after the release is suspected or detected.

(4) A confirmed release based on the soil and ground water samples taken at the UST removal requires the owner or operator to contact the agency to report within twenty-four (24) hours after the release is confirmed if a leaking underground storage tank (LUST) incident number was not obtained under subdivision (3).

(5) A closure report must be completed and submitted to the agency within thirty (30) days after the UST removal. The closure report must include the following:

(A) The notification form provided by the agency under 329 IAC 9-2-2.

(B) The underground storage tank closure report. The closure report must include the following information:

(i) For the responsible party, the following information:

(AA) The UST system facility owner or operator name, agency's owner identification number, address, and phone number.

(BB) The name of the UST system facility contact person, owner or operator affiliation, and phone number.

(CC) Owner or operators during the last twenty-five (25) years.

(ii) For the UST contractor, the following information:

(AA) UST closure contractor company name and address.

(BB) Name of the person on-site during closure that is certified by the office of the state fire marshal to perform UST closure and that person's certification number.

(iii) For the UST site information regarding the following:

(AA) Facility name, agency's facility identification number, address, and phone number.

(BB) Type of facility, past and current operation.

(CC) Coverage, stating if coverage is turf, concrete, asphalt, or other.

(DD) History of any spill reports listed by incident number.

(EE) Site proximity to both human and environmentally sensitive areas identified in RISC, such as residences, schools, and well fields.

(FF) Backfill and site natural soil texture.

(iv) Site specific map or maps with illustrated legends and compass directions and at appropriate scale to show site details described as follows:

(AA) Drainage features, surface slope, or surface water run-off direction.

(BB) Identified above ground features, such as buildings, roadways, man ways, pump islands, and utility and property lines.

(CC) Identified subsurface features, such as tanks and excavation pit, piping, and utility conduits.

(DD) Locations where samples were taken, soil borings made, and monitoring wells drilled.

(EE) Location of active and previously closed tanks, as applicable.

(FF) Site surroundings, such as adjacent buildings, businesses, or human and environmentally sensitive areas, such as residences, schools, and wells or well fields.

(v) Information for the underground storage tank being closed as follows:

(AA) Number and volume of tanks.

(BB) Past and present contents of the tank.

(CC) Construction material of tank.

(DD) Construction and material of piping.

(EE) Age and installation date of tank.

(FF) Leak detection methods used.

(GG) Records of the most current tank tightness test results.

(HH) Records of any other current leak detection method results including the inventory records, groundwater or vapor monitoring results.

(II) Information on any previously closed UST system, such as the date closed and the number, size, and product stored.

(vi) Physical and chemical results of the samples taken under subdivision (2) as follows:

(AA) Data from analysis of soil samples presented in a tabular format.

(BB) Data from analysis of water samples presented in a tabular format.

(CC) A signed laboratory certificate of analysis listing analysis method, preparation method, date of sample receipt, and date of analysis.

(DD) Proper sample identification numbers for cross reference to UST site maps.

(EE) Chain of custody documentation.

(FF) Description of the sampling procedures, sampling equipment, and decontamination procedures.

(GG) Data from analyses of used oil sampling, as applicable.

(vii) Miscellaneous closure documentation, including manifests or receipts, or both, as follows:

(AA) Contaminated soil and contaminated water disposal documentation.

(BB) Remaining product and sludge disposal documentation.

(CC) Tank and piping disposal documentation.

(6) If one (1) or more additional tanks are discovered during a closure, the owner and operator shall conduct the following:

(A) The owner and operator shall close each additional tank under this rule.

(B) The owner and operator shall supply all known information on each additional tank in the closure report.

(7) The commissioner shall require additional information if the closure report is deemed incomplete or incorrect. The commissioner shall provide in writing the reasons for requiring additional information and a list of the additional information required to be submitted. The owner and operator shall have thirty (30) days to submit the additional information to the agency, after receipt of written notification from the commissioner that additional information is required.

(8) The closure will not be considered complete until all closure report requirements are met.

(9) If the underground storage tank contains hazardous substances the owner and operator shall perform sampling and analyses as required for the chemical of concern by the criteria under RISC.

(10) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12.

(b) Soil sampling for in-place closure must be achieved as follows:

(1) The owner and operator shall submit a site plan with proposed boring locations to the agency with the notification form under 329 IAC 9-2-2 and to the office of the state fire marshal for approval to request in-place closure. The accompanying map must be to scale and include the entire site. Submission of an additional map of solely the underground storage area is recommended for large sites. The boring locations should be as follows:

(A) One (1) boring every twenty (20) feet around the tank area, with a minimum of four (4) borings.

(B) Each boring must be within three (3) feet adjacent to the underground storage tank.

(2) The commissioner may grant conditional approval to proceed with in-place closure of the UST system based on the following:

(A) The location of the borings as required under subdivision (1).

(B) Approval from the office of the state fire marshal.

(C) The criteria established under RISC.

(3) After approval is received under subdivision (2), the owner and operator may proceed with soil borings that must meet the following requirements:

(A) Soil sampling must be performed continuously using a sampling device relevant to the drilling technology used.

(B) Borings must extend two (2) feet or greater below the elevation of the base of the underground storage tank.

(C) If the boring depth is fifteen (15) feet or less, a minimum of two (2) soil samples are required at the following locations:

(i) Point where a contaminant is detected.

(ii) One (1) soil sample must be taken at the midpoint of the boring.

(iii) One (1) soil sample must be taken at the bottom of the boring.

(D) If the boring depth is greater than fifteen (15) feet, a minimum of three (3) soil samples are required. The most shallow soil sample must be taken one (1) foot or greater below grade. Samples must be taken where the release is suspected or detected.

(4) Piping and dispenser sampling and analysis must be completed under subsection (c)(3) or (c)(4).

(5) The waiver of closure sampling requirements under subsection (i) will not be granted for in-place closure.

(c) Soil sampling for removal closure must be achieved as follows:

(1) Soil removal is allowed as follows:

(A) The backfill may be removed from the following to provide access to native soil for sampling:

(i) Tank cavity excavation.

(ii) Piping trenches.

(iii) Dispensing unit areas.

(iv) Remote fill pipe trenches.

(B) A maximum depth of twelve (12) inches of native soil may be removed from the following:

(i) Sidewalls and bottom of the tank cavity excavation.

(ii) Piping trenches.

(iii) Dispensing unit areas.

(iv) Remote fill pipe trenches.

(C) Closure soil samples must be taken from the:

(i) excavated backfill under subdivision (2)(B); and

(ii) undisturbed native soil under subdivision (2)(A).

(2) Each underground storage tank excavation must be sampled separately. Composite samples are not acceptable for closure. The samples must meet the following requirements:

(A) All samples must be discrete grab samples taken directly from the undisturbed native soil from the base and sidewalls of the excavation. The following requirements apply to samples:

(i) Bottom samples must meet the following requirements:

(AA) Soil sampling must consist of a minimum of two (2) soil samples taken within two (2) feet below both ends of each underground storage tank.

(BB) If the underground storage tank capacity is greater than ten thousand (10,000) gallons, one (1) additional sample must be taken within two (2) feet below the middle of the underground storage tank.

(ii) Sidewall samples must meet the following requirements:

(AA) The sidewalls must be sampled and analyzed at a rate of one (1) sample every twenty (20) feet of perimeter distance around the excavation zone.

(BB) If the perimeter dimension measures less than eighty (80) feet, a minimum of one (1) sample for each sidewall must be taken.

(CC) Sidewall samples must be taken at a point half the distance from the surface to the bottom of the underground storage tank excavation.

(B) Excavated materials must be staged in a separate area. Samples must be discrete grab samples taken directly from the excavated materials. Sampling of the excavated soil must occur for every fifty (50) cubic yards of material.

(3) Native soil under piping and dispenser islands, which routinely contains regulated substances, must be sampled. All samples must be discrete grab samples. The following requirements apply to the number and location of sampling for piping and dispensers:

(A) Soil sampling under piping must be completed as follows:

(i) Soil under piping must be sampled every twenty (20) feet, or fraction thereof, along the piping run. If the piping run is less than twenty (20) feet in length, one (1) soil sample must be taken half the distance between the underground storage tank excavation and the pump or dispenser island.

(ii) Piping must have soil sampled under piping elbows and connectors.

(B) Soils under the dispenser islands must be sampled and analyzed at a rate of one (1) soil sample per dispenser.

(C) If the UST system has a remote fill line, the following soil samples must be collected:

(i) Soils under the remote fill line must be sampled and analyzed at the origin or fill area and every twenty (20) feet, or fraction thereof, from the fill area to the underground storage tank connection.

(ii) If the remote fill line is less than twenty (20) feet, one (1) soil sample must be taken half the distance between the fill area and the underground storage tank.

(D) Composite samples are not acceptable for closure.

(4) Soil sampling under the piping and product dispenser islands are not required if the following requirements are complied with:

(A) All:

(i) piping that routinely contains product; and

(ii) dispensers;

are located directly above the UST system that is being closed.

(B) The requirements of clause (A) are documented in the closure report.

(d) Soil sampling for change-in-service must be achieved as follows:

(1) The boring locations are as follows:

(A) One (1) soil boring every twenty (20) feet around the tank area, with a minimum of four (4) borings.

(B) Each soil boring must be within three (3) feet adjacent to the underground storage tank.

(C) Soil sampling must be performed continuously using a sampling device relevant to the drilling technology used.

(D) Each soil boring must extend two (2) feet or greater below the elevation of the base of the underground storage tank.

(E) If the soil boring depth is fifteen (15) feet or less, a minimum of two (2) soil samples are required at the following locations:

(i) Point where a contaminant is detected.

(ii) One (1) soil sample must be taken at the midpoint of the soil boring.

(iii) One (1) soil sample must be taken at the bottom of the soil boring.

(F) If the soil boring depth is greater than fifteen (15) feet, a minimum of three (3) soil samples are required. The most shallow soil sample must be taken one (1) foot or greater below grade. Samples must be collected where the release is suspected or detected.

(2) Piping and dispenser sampling and analysis must be completed under subsection (c)(3) or (c)(4).

(3) The waiver of closure sampling requirements under subsection (i) will not be granted for change in service.

(e) Water samples for an in-place closure must be collected in the following quantities and locations:

(1) One (1) boring must be placed in each of the four (4) principal directions within ten (10) feet of the area most likely to have contaminated ground water.

(2) Each boring must extend to the first saturated groundwater zone or to a total depth of thirty (30) feet below grade at the area of suspected or confirmed release. A water sample must be collected from each boring if ground water is present within a depth of thirty (30) feet depth or less.

(3) If ground water is not encountered within a depth of thirty (30) feet, and soil contamination is suspected or indicated at a depth of twenty (20) feet or greater, the boring must continue to a depth where a ground water sample can be obtained.

(4) A ground water sample must be collected within any area where a suspected contaminant release has occurred, or where a chemical of concern release has been substantiated through one (1) of the following:

(A) Visual staining of the soil or water.

(B) Field screening with the following:

(i) Flame ionization detector or FID.

(ii) Photo ionization detector or PID.

(iii) Field gas chromatograph or GC.

(C) Petroleum odors.

(D) Laboratory analytical results.

(5) If bedrock is encountered in a boring before a depth of thirty (30) feet is reached, and a saturated ground water zone is not encountered in the boring, an owner or operator may contact the agency for approval of alternative sampling or waiver of ground water sampling requirements. The agency may approve a waiver of ground water sampling within the bedrock if the owner or operator can demonstrate the following:

(A) A soil zone at least ten (10) feet thick existing immediately above the bedrock does not have a contaminant.

(B) A soil sample collected immediately above the bedrock does not have a contaminant.

(f) Water samples for a removal closure must be collected in the following quantities and locations:

(1) If any water is encountered in any excavation, a minimum of one (1) water sample must be appropriately collected from the water encountered.

(2) A ground water sample must be collected within any area where a suspected contaminant release has occurred, or where a chemical of concern release has been substantiated through one (1) of the following:

(A) Visual staining of the soil or water.

(B) Field screening with the following:

(i) Flame ionization detector or FID.

(ii) Photo ionization detector or PID.

(iii) Field gas chromatograph or GC.

(C) Petroleum odors.

(D) Laboratory analytical results.

(3) The sample collected in subdivision (2) must be collected from a continuously sampled boring that extends to the first saturated groundwater zone or to a total depth of thirty (30) feet below grade at the area of suspected or confirmed release.

(4) Except when a ground water sample is collected under subdivision (1) or (2), a ground water sample must be collected from a continuous boring in the center of the tank pit that extends to the first saturated ground water zone or to a total depth of thirty (30) feet below grade.

(5) If ground water is not encountered within a depth of thirty (30) feet, and soil contaminant is suspected or indicated at a depth of twenty (20) feet or greater, the boring must continue to a depth where a ground water sample can be obtained.

(6) If bedrock is encountered in a boring before a depth of thirty (30) feet is reached, and a saturated ground water zone is not encountered in the boring, an owner or operator may contact the agency for approval of alternative sampling or waiver of ground water sampling requirements. The agency may approve a waiver of ground water sampling within the bedrock if the owner or operator can demonstrate the following:

(A) A soil zone at least ten (10) feet thick existing immediately

above the bedrock does not have a contaminant.

(B) A soil sample collected immediately above the bedrock does not have a contaminant.

(g) Water samples for a change-in-service must be collected in the following quantities and locations:

(1) One (1) boring must be placed in each of the four (4) principal directions within ten (10) feet of the area most likely to have contaminated ground water.

(2) Each boring must extend to the first saturated groundwater zone or to a total depth of thirty (30) feet below grade at the area of suspected or confirmed release. A water sample must be collected from each boring if ground water is present within a depth of thirty (30) feet depth or less.

(3) If ground water is not encountered within a depth of thirty (30) feet, and soil contamination is suspected or indicated at a depth of twenty (20) feet or greater, the boring must continue to a depth where a ground water sample can be obtained.

(4) A ground water sample must be collected within any area where a suspected contaminant release has occurred, or where a chemical of concern release has been substantiated through one (1) of the following:

(A) Visual staining of the soil or water.

(B) Field screening with the following:

(i) Flame ionization detector or FID.

(ii) Photo ionization detector or PID.

(iii) Field gas chromatograph or GC.

(C) Petroleum odors.

(D) Laboratory analytical results.

(5) If bedrock is encountered in a boring before a depth of thirty (30) feet is reached, and a saturated ground water zone is not encountered in the boring, an owner or operator may contact the agency for approval of alternative sampling or waiver of ground water sampling requirements. The agency may approve a waiver of ground water sampling within the bedrock if the owner or operator can demonstrate the following:

(A) A soil zone at least ten (10) feet thick existing immediately above the bedrock does not have a contaminant.

(B) A soil sample collected immediately above the bedrock does not have a contaminant.

(h) During removal closure, native soil and backfill that is to be returned to the underground storage tank excavation must be sampled. The sampling must meet the requirements as follows:

(1) The exposure criteria established under RISC.

(2) One (1) discrete grab sample must be taken for every fifty (50) cubic yards of native soil or backfill.

(i) Closure sampling waiver requirements must be completed as follows:

(1) The commissioner may waive closure sampling based on the following:

(A) The LUST incident number is assigned and the following requirements are completed:

(i) Closure is conducted due to a confirmed release at the site.

(ii) The confirmed release occurred before the request for closure.

(B) The initial site characterization meets the requirements of 329 IAC 9-5-5.1.

(C) The corrective action plan meets the requirements of 329 IAC 9-5-7.

(2) Sites that have previous releases and are not under remediation at the time of closure are not eligible for the closure sampling waiver.

(Solid Waste Management Board; 329 IAC 9-6-2.5)

SECTION 38. 329 IAC 9-6-3 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-6-3 Applicability to previously closed UST systems

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 3. When directed by the commissioner, the owner and operator of ~~a~~ **an** UST system permanently closed before December 22, 1988, shall assess the excavation zone and close the UST system in accordance with this rule, **and the rules of the fire prevention and building safety commission at 675 IAC 12-12,** if releases from the underground storage tank may, in the judgment of the commissioner, pose a current or potential threat to human health and the environment. ~~under rules of the fire prevention and building safety commission at 675 IAC 12-12.~~

(Solid Waste Management Board; 329 IAC 9-6-3; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1074; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3722; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 39. 329 IAC 9-6-4 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-6-4 Closure records

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 4. The owner and operator shall maintain records in accordance with 329 IAC 9-3-1 that are capable of demonstrating compliance with closure requirements under this rule. The results of the excavation zone assessment required in section 2 of this rule must be submitted to the agency within thirty (30) days after completion of ~~permanent~~ closure or change-in-service of the UST system. Results of the excavation zone assessment must be maintained for at least three (3) years after completion of ~~permanent~~ closure or change-in-service in one (1) of the following ways:

(1) By the owner and operator who took the UST system out of service.

(2) By the current owner and operator of the UST system site.

(3) By mailing these records to the agency if the records cannot be maintained at the closed facility.

(Solid Waste Management Board; 329 IAC 9-6-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1074; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3722; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 40. 329 IAC 9-6-5 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-6-5 Temporary closure

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 5. (a) When ~~a~~ **an** UST system is temporarily closed, the owner and operator shall complete the following:

(1) Continue operation and maintenance of corrosion protection under 329 IAC 9-3.1-2.

(2) Continue operation and maintenance of any release detection under 329 IAC 9-7, except release detection is not required as long as the UST system is empty. The UST system is empty when all materials have been removed using commonly employed practices so that no more than:

(A) two and five-tenths (2.5) centimeters or one (1) inch of residue; or

(B) three-tenths percent (0.3%) by weight of the total capacity of the UST system;

remains in the system.

(3) Comply with 329 IAC 9-4 and 329 IAC 9-5 if a release is suspected or confirmed.

(b) When ~~a~~ **an** UST system is temporarily closed for three (3) months or more, the owner and operator also shall comply with the following requirements:

(1) Leave vent lines open and functioning.

(2) Cap and secure the following:

(A) All other lines.

(B) Pumps.

(C) Manways.

(D) Ancillary equipment.

(c) When ~~a~~ **an** UST system has been temporarily closed for twelve (12) months, the following requirements must be completed:

(1) The owner and operator shall permanently close the UST system if it does not meet:

(A) the performance standards in 329 IAC 9-2-1 for new UST systems; or

(B) the upgrading requirements in 329 IAC 9-2.1;

except that the spill and overfill equipment requirements do not have to be met.

(2) The owner and operator shall permanently close the substandard UST system at the end of the temporary twelve (12) month period under sections 1 through 4 of this rule.

(3) The commissioner may grant an extension of the twelve (12) month temporary closure period based on the following:

(A) The owner and operator shall complete a site assessment under section 2 of this rule before the owner and operator may apply for an extension.

(B) The length of the extension is based on the following:

(i) The results of the site assessment under clause (A).

(ii) The owner and operator shall submit written proof that explains why permanent closure cannot take place within the twelve (12) month period of temporary closure.

(iii) The owner and operator shall submit information that explains when permanent closure will take place.

(d) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12. *(Solid Waste Management Board; 329 IAC 9-6-5; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3722; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 41. 329 IAC 9-7-1 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-7-1 General requirements for all UST systems

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 1. (a) All owners and operators of new and existing UST systems shall provide a method, or combination of methods, of release detection that does the following:

(1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product.

(2) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition.

(3) Meets the performance requirements in section 4 or 5 of this rule, with any performance claims and the manner of determination of the performance claims described in writing by the equipment manufacturer or installer. In addition, methods used after the date shown in the following table corresponding with the specified method, except for methods permanently installed prior to that date, must be capable of detecting the leak rate or quantity specified for that method in the corresponding citation of this rule shown in the table with a probability of detection (Pd) of ninety-five hundredths (0.95) and a probability of false alarm (Pfa) of five-hundredths (0.05):

Method	Citation	Date After Which Pd/Pfa Was Demonstrated
Manual tank gauging	section 4(2) of this rule	December 22, 1990
Tank tightness testing	section 4(3) of this rule	December 22, 1990
Automatic tank gauging	section 4(4) of this rule	December 22, 1990
Automatic line leak detectors	section 5(1) of this rule	September 22, 1991
Line tightness testing	section 5(2) of this rule	December 22, 1990

(b) When a release detection method that is operated under the performance standards in sections 4 and 5 of this rule indicates a release may have occurred, the owner and operator shall notify the agency under 329 IAC 9-4.

(c) Owners and operators of all UST systems shall comply with the release detection requirements of this rule by December 22 of the year listed in the following table:

SCHEDULE FOR PHASE-IN OF RELEASE DETECTION

Year System Was Installed	Year When Release Detection Was Required (By December 22 of the Year Indicated)				
	1989	1990	1991	1992	1993
Before 1965 or date unknown	RD	P			
1965–69		P/RD			
1970–74		P	RD		
1975–79		P		RD	
1980–88		P			RD
New tanks (after December 22, 1988)					

immediately upon installation. P = Shall have begun release detection for all pressurized piping under sections 2(2)(A) and 3(2)(D) of this rule. RD = Shall have begun release detection for tanks and suction piping under sections 2(1), 2(2)(B), and 3 of this rule.

(d) Any existing UST system that cannot apply a method of release detection that complies with this rule shall complete the closure procedures under ~~329 IAC 9-6~~ **329 IAC 9-6-2.5** by the date on which release detection is required for that UST system under subsection (c). *(Solid Waste Management Board; 329 IAC 9-7-1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3723; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)*

SECTION 42. 329 IAC 9-7-2 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-7-2 Requirements for petroleum UST systems
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 2. The owner and operator of a petroleum UST system shall provide release detection for tanks and piping as follows:

(1) Tanks must be monitored at least every thirty (30) days for releases using one (1) of the methods listed in section 4(4) through 4(8) of this rule, except for the following:

(A) ~~A~~ **An** UST system that meets **the performance standards in 329 IAC 9-2-1 or 329 IAC 9-2.1 may use:**

~~(i) the performance standards in 329 IAC 9-2-1 or 329 IAC 9-2.1; and~~

~~(ii)~~ **(i)** the monthly inventory control requirements in section 4(1) or 4(2) of this rule; **and**

~~may use~~ **(ii)** tank tightness testing conducted under section 4(3) of this rule at least every five (5) years until December 22, 1998, or until ten (10) years after the tank is installed or upgraded under 329 IAC 9-2.1-1(b), whichever is later.

(B) ~~A~~ **An** UST system that does not meet the performance standards in 329 IAC 9-2-1 or 329 IAC 9-2.1 may use:

(i) monthly inventory controls conducted under section 4(1) or 4(2) of this rule; and

(ii) annual tank tightness testing conducted under section 4(3) of this rule;

until December 22, 1998, when the tank must be upgraded under 329 IAC 9-2.1 or ~~permanently~~ closed under 329 IAC 9-6-1 **through 329 IAC 9-6-2.5.**

(C) Tanks with capacity of five hundred fifty (550) gallons or less may use weekly tank gauging conducted under section 4(2) of this rule.

(2) Underground piping that routinely contains regulated substances must be monitored for releases in a manner that meets one (1) of the following requirements:

(A) Underground piping that conveys regulated substances under pressure must:

(i) be equipped with an automatic line leak detector under section 5(1) of this rule; and

(ii) have an annual line tightness test conducted under section 5(2) of this rule or have monthly monitoring conducted under section 5(3) of this rule.

(B) Underground piping that conveys regulated substances under suction must either have a line tightness test conducted at least every three (3) years under section 5(2) of this rule or use a monthly monitoring method under section 5(3) of this rule. No release detection is required for suction piping that is designed and constructed to meet the following standards:

(i) The below-grade piping operates at less than atmospheric pressure.

(ii) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released.

(iii) Only one (1) check valve is included in each suction line.

(iv) The check valve is located directly below and as close as practical to the suction pump.

(v) A method is provided that allows compliance with items (ii) through (iv) to be readily determined.

(Solid Waste Management Board; 329 IAC 9-7-2; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3724; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 43. 329 IAC 9-7-3 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-7-3 Requirements for hazardous substance UST systems
Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 3. The owner and operator of a hazardous substance UST system shall provide release detection that meets the following requirements:

(1) Release detection at an existing UST system must meet the requirements for a petroleum UST system in section 2 of this rule. By December 22, 1998, all existing hazardous substance UST systems shall meet the release detection requirements for a new system in subdivision (2).

(2) Release detection at a new hazardous substance UST system must meet the following requirements:

(A) Secondary containment systems must be designed, constructed, and installed to complete the following:

(i) Contain regulated substances released from the tank system until they are detected and removed.

(ii) Prevent the release of regulated substances to the environment at any time during the operational life of the UST system.

(iii) Be checked for evidence of a release at least every thirty (30) days.

(B) Double-walled tanks must be designed, constructed, and installed to complete the following:

(i) Contain a release from any portion of the inner tank within the outer wall.

(ii) Detect the failure of the inner wall.

(C) External liners, including vaults, must be designed, constructed, and installed to complete the following:

(i) Contain one hundred percent (100%) of the capacity of the largest tank within its boundary.

(ii) Prevent the interference of precipitation or ground water intrusion with the ability to contain or detect a release of regulated substances.

(iii) Surround the tank completely so that the external liners, including vaults, are capable of preventing lateral as well as vertical migration of regulated substances.

(D) Underground piping must be equipped with secondary containment that satisfies the requirements of clause (A) and may include either of the following:

(i) Trench liners.

(ii) Jacketing of double-walled pipe.

In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector under section 5(1) of this rule.

(E) Other methods of release detection may be used if the owner and operator complete the following:

(i) Demonstrate to the commissioner that an alternate method can detect a release of the stored substance as effectively as any of the methods under section 4(2) through 4(8) of this rule can detect a release of petroleum.

(ii) Provide information to the commissioner on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, and the characteristics of the UST site. **The information must be based on the criteria established under RISC.**

(iii) Obtain approval from the commissioner to use the alternate release detection method before the installation and operation of the new UST system.

(Solid Waste Management Board; 329 IAC 9-7-3; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3724; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 44. 329 IAC 9-7-4 IS AMENDED TO READ AS FOLLOWS:

329 IAC 9-7-4 Methods of release detection for tanks

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2
Affected: IC 13-23

Sec. 4. Each method of release detection for tanks used to meet section 2 of this rule must be conducted in accordance with the following:

(1) Product inventory control, or another test of equivalent performance, must be conducted monthly to detect a release of at least one percent (1.0%) of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

(A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day.

(B) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth (⅛) of an inch.

(C) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery.

(D) Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of six (6) cubic inches for every five (5) gallons of product withdrawn.

(E) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth (⅛) of an inch at least once a month.

(F) Deliveries must be made through a drop tube that extends to within one (1) foot of the tank bottom.

(2) Manual tank gauging must meet the following requirements:

(A) Tank liquid level measurements are taken at the beginning and ending of a period of at least thirty-six (36) hours during which no liquid is added to or removed from the tank.

(B) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period in clause (A).

(C) The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth (⅛) of an inch.

(D) A leak is suspected and subject to 329 IAC 9-4 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal Tank Capacity	Weekly Standard (1 Test)	Monthly Standard (Average of 4 Tests)
550 gallons or less	10 gallons	5 gallons
551–1,000 gallons	13 gallons	7 gallons
1,001–2,000 gallons	26 gallons	13 gallons

(E) The following requirements apply:

(i) Only tanks of five hundred fifty (550) gallons or less nominal capacity may use manual tank gauging as the sole method of release detection.

(ii) Tanks of five hundred fifty-one (551) to two thousand (2,000) gallons may use manual tank gauging in place of ~~manual~~ **product** inventory control in subdivision (1).

(iii) Tanks of greater than two thousand (2,000) gallons nominal capacity must not use manual tank gauging to meet the requirements of this rule.

(3) Tank tightness testing, or another test of equivalent performance, must be capable of detecting a one-tenth (0.1) gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of the following:

(A) Thermal expansion or contraction of the product.

(B) Vapor pockets.

(C) Tank deformation, evaporation, or condensation.

(D) Location of the water table.

(4) Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control must meet the following requirements:

(A) The automatic product level monitor test can detect a two-tenths (0.2) gallon per hour leak rate from any portion of the tank that routinely contains product.

(B) Inventory control, or another test of equivalent performance, is conducted under subdivision (1).

(5) Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

(A) The materials used as backfill are sufficiently porous to readily allow diffusion of vapors from releases into the excavation area. The materials used as backfill may include any of the following:

(i) Gravel.

(ii) Sand.

(iii) Crushed rock.

(B) The stored regulated substance or a tracer compound placed in the tank system, which may include gasoline as an example, is sufficiently volatile to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank.

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the ground water, rainfall, soil moisture, or other known interferences so that a release could go undetected for more than thirty (30) days.

(D) The **background** level ~~of background contamination~~ **for contaminants** in the excavation zone must not interfere with the method used to detect releases from the tank.

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of any of the following:

(i) The regulated substance stored in the tank system.

(ii) A component or components of the regulated substance stored in the tank system.

(iii) A tracer compound placed in the tank system.

(F) In the UST excavation zone, the site is assessed:

(i) to ensure compliance with clauses (A) through (D); and

(ii) to establish the number and positioning of observation wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product.

(G) Observation wells are clearly marked and secured to prevent damage and unauthorized access and tampering.

(6) Testing or monitoring for liquids on the ground water must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one (1).

(B) Ground water is never more than twenty (20) feet from the ground surface. The hydraulic conductivity of the soil between the UST system and the observation wells, monitoring wells, or monitoring devices is not less than one-hundredth (0.01) centimeter per second. The soil may consist of any of the following:

(i) Gravel.

(ii) Coarse to medium sand.

(iii) Coarse silt.

(iv) Other permeable material.

(C) The slotted portion of the observation well casing must be designed:

(i) to prevent migration of natural soils or filter pack into the well; and

(ii) to allow entry of regulated substance on the water table into the well under both high and low ground water conditions.

(D) Observation wells must be sealed from the ground surface to the top of the filter pack.

(E) Observation wells, monitoring wells, or monitoring devices must be located as follows:

(i) An observation well intercepts the excavation zone.

(ii) A monitoring well that meets the requirements of rules of the department of natural resources at ~~310 IAC 16~~ **312 IAC 13** is installed as close to the excavation zone as is technically feasible if an observation well cannot intercept the excavation zone.

(iii) A monitoring device intercepts the excavation zone or is as close to the excavation zone as is technically feasible.

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth (⅛) of an inch of free product on top of the ground water in the observation wells or monitoring wells.

(G) Within and immediately below the UST system excavation zone, the site is assessed:

(i) to ensure compliance with clauses (A) through (E); and

(ii) to establish the number and positioning of observation wells, monitoring wells, or monitoring devices that will detect releases from any portion of the tank that routinely contains product.

(H) Observation wells and monitoring wells are clearly marked and secured to prevent damage and unauthorized access and tampering.

(7) Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one (1) of the following requirements:

(A) For a double-walled UST system, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product.

(B) For ~~a~~ **an** UST system with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier. The following must be completed:

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (no more than 1×10^{-6} centimeters per second for water) to direct a release to an observation well and allow its detection.

(ii) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected.

(iii) For cathodically protected tanks, the secondary barrier must be installed so that the secondary barrier does not interfere with the proper operation of the cathodic protection system.

(iv) The ground water, soil moisture, or rainfall must not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) days.

(v) The site is assessed to ensure that the secondary barrier is always above the ground water and not in a twenty-five (25) year flood plain unless the barrier and observation well designs are for use under such conditions.

(vi) Observation wells are clearly marked and secured to prevent damage and unauthorized access and tampering.

(C) For tanks with an internally fitted liner, the following must be completed:

(i) An automated device that can detect a release between the inner wall of the tank and the liner.

(ii) The liner is compatible with the substance stored.

(8) Any other type of release detection method, or combination of methods, may be used if one (1) of the following is completed:

(A) The release detection method or combination of methods must meet the following requirements:

(i) Capability to detect a two-tenths (0.2) gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month.

(ii) Probability of detection of ninety-five hundredths (0.95) and a probability of false alarm of five-hundredths (0.05).

(iii) The method is third party certified.

(B) The commissioner may approve another method if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subdivisions (3) through (7) and clause (A). In comparing methods, the commissioner shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator shall comply with any conditions imposed by the commissioner on the method's use to ensure the protection of human health and the environment.

(Solid Waste Management Board; 329 IAC 9-7-4; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3725; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535)

SECTION 45. THE FOLLOWING ARE REPEALED: 329 IAC 9-1-10.1; 329 IAC 9-1-10.2; 329 IAC 9-1-14.1; 329 IAC 9-1-29.1; 329 IAC 9-1-41; 329 IAC 9-1-41.1; 329 IAC 9-1-42.1; 329 IAC 9-5-3.1; 329 IAC 9-5-4.1; 329 IAC 9-6-2; 329 IAC 9-7-6.

Notice of First Meeting/Hearing

Under IC 4-22-2-24, IC 13-14-8-6, and IC 13-14-9, notice is hereby given that on October 15, 2002 at 1:30 p.m., at the Indiana Government Center-South, 402 West Washington Street, Conference Center Room A, Indianapolis, Indiana the Solid Waste Management Board will hold a public hearing on amendments to 329 IAC 9.

The purpose of this hearing is to receive comments from the public prior to preliminary adoption of these rules by the board. All interested persons are invited and will be given reasonable opportunity to express their views concerning the proposed amendments. Oral statements will be heard, but for the accuracy of the record, all comments should be submitted in writing.

Additional information regarding this action may be obtained from Lynn West, Rules, Outreach and Planning Section, Office of Land Quality, (317) 232-3593 or (800) 451-6027 (in Indiana).

Individuals requiring reasonable accommodations for participation in this event should contact the Indiana Department of Environmental Management, Americans with Disabilities Act coordinator at:

Attn: ADA Coordinator
Indiana Department of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

or call (317) 233-0855. TDD: (317) 233-6565. Speech and hearing impaired callers may contact IDEM via the Indiana Relay Service at 1-800-743-3333. Please provide a minimum of 72 hours' notification.

Copies of these rules are now on file at the Office of Land Quality, Indiana Department of Environmental Management, Indiana Government Center-North, 100 North Senate Avenue, Eleventh Floor West, Indianapolis, Indiana and are open for public inspection.